

Towards an Authority File of French International Boundaries

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SUMMARY

The French National Geographic Institute (IGN) had paid special attention to the representation of international boundary during the survey of the topographic base map of France: use of treaty texts, survey of most of marks. Since the end of last century, IGN's main task is to build and maintain the large-scale reference frame (RGE), composed of interoperable layers: orthophotography, topography, addresses and parcels (the latter in collaboration with the Tax Department). The photogrammetric survey has achieved the one-meter accuracy for most topographic features, but the administrative boundaries do not yet meet everywhere this standard, especially when the limits are different on the cadastral maps of two neighboring French communes; the process of establishing a single cadastral representation (RPCU) will solve this problem, but it will take several years. We will describe how the IGN seeks to improve more quickly the digital files of international borders of France, in particular to meet the requirements of the Directive INSPIRE (art. 10.2). This work is carried in collaboration with neighboring countries, first within the framework of the association of European National Mapping, Cadastral and Land Registry Authorities, EuroGeographics, and also in that of the joint demarcation committees. A systematic comparison of the boundary lines in the large-scale national datasets (topographic and parcel layers of RGE) was undertaken, referring to the Treaty of delimitation and demarcation minutes (if available). In most areas, the digital cadastral map could be the reference. In mountain areas (Alps and Pyrenees) where the cadastral map is of more uneven quality, IGN has made, from 2006 to 2014, a photogrammetric plotting of the topographic objects (ridge lines, roads and rivers) on which relies the boundary line. French IGN and Italian Military Survey (IGM) completed (1989-2008) the GPS survey of boundary marks within the maintenance border commission, ongoing comparison of their photogrammetric lines between the marks. Comparison of photogrammetric plots was started with Andorra within the border demarcation commission (2001-2011) The GPS survey of the Franco-Spanish border marks began in 2011, by Spanish IGN and Army geographical center, within the maintenance border commission. IGN is involved in the State Boundaries of Europe (SBE) knowledge exchange network of EuroGeographics (formerly EuroBoundaries Project): it aims at compiling a multipurpose dataset, meant to be the "definitive" description of the national boundaries of European countries, based on the Treaties and with precise geometric description of boundary points, marks and line. As an interim solution, the best IGN data had yet been provided to the European Location Frame (ELF) project undertaken by EuroGeographics.