INTERMAGNET observatories recently undertaken the production of 1-second data. This effort was motivated to allow studies of rapid variations of external origin at higher frequencies.

Consequently, the timing of acquisition systems were synchronized in order to make possible direct comparisons between data from various observatories and data from observatories and from magnetic satellite missions.

Since April 2010, the 5 French permanent magnetic observatories of Austral and Antarctic territories (Amsterdam, Concordia, Crozet, Dumont d’Urville and Kerguelen) are equipped with such 1-second data acquisition systems.

In this study, the data of these observatories are used to assess the impact of sampling rate increasing from 1-minute data to 1-second data as a function of latitude and of the level of magnetic activity.