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Architecture of environmental information systems applied to scientific observatories: examples of Carnoulès and MEDYCYSS observatories

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Abstract According to the missions of the French OSUs (Observatoires des Sciences de l'Univers), an observatory must provide, on a given territory, a permanent monitoring activity. This mission requires strict organization linked to a relevant monitoring network, a high level of data quality and data availability. The requirements are provided by an Environmental Information System (EIS) such as those implemented for two Observation Systems which are part of OREME OSU: one dedicated to hydro-biogeochemical processes concerning metals and metalloids in surface waters downstream from the Carnoulès mine, the other, dedicated to Multi Scale Observatory of flood dynamics and hydrodynamics in Karst. A specific architecture was chosen to develop an EIS that identifies and provides information mainly around three functions: (i) data centralization in a client/server database following the standards for metadata description, (ii) safe management of scientific information, and (iii) a geo-referenced photo album representing territory, measurement stations, and instrumentation devices used.

Key words observatory; environmental information system; normalized metadata; GIS; document management; database OSU OREME; MEDYCYSS; Carnoulès