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**COMBINED CONTRIBUTION OF ACTIVE RFID TECHNOLOGY, TIME LAPSE CAMERA AND DTM FOR THE MONITORING OF THE HAUT-DRAC RIVER RESTORATION (SOUTHERN ALPS, FRANCE)**

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The Drac River in the Champsaur valley drains a 544 km<sup>2</sup> catchment. In the recent past, this braided river was largely impacted by intensive gravel mining. In the section near Saint-Bonnet-en-Champsaur, a dramatic channel incision occurs, with important consequences on bank stability. The embankment protecting a leisure centre artificial water body has been threatened by channel incision, and therefore, the local water management authority (CLEDA) decided to restore the river in 2014 in order to stop incision and to recover the braided morphology.

The aim of this study is to design a specific methodology for monitoring the restored site. In fact, most of the sediment supply is actually controlled by the "Chabottes plain". This plain is a large active braided section located 3 km upstream of the restored site. For understanding the recovery of the restored site, it is important to evaluate the sediment connectivity between the upstream braided plain and the restored reach.

One hundred artificial pebbles have been equipped with active RFID tracers and deployed in the downstream part of the Chabottes plain in order to characterize distances of transport of bedload particles. Moreover, 100 active RFID transponders have been inserted in erosion columns in order to evaluate scour-and-fill depths along the intermediate section. This equipment is completed by sequential high-resolution DTMs (from airborne LiDAR data and from SfM photogrammetry) and by time lapse cameras in order to quantify and characterize channel adjustments.