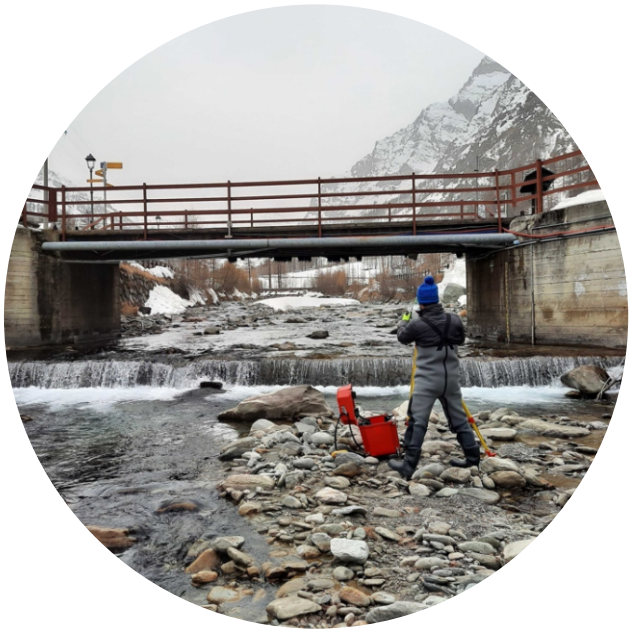
AOSTA VALLEY REGION, ITALY

Service for riverbed liquid discharge measurement



The **Autonomous Region of Aosta Valley** has requested the execution of flow measurements in order to develop and/or update the **rating curves** of some water courses in the territory and to integrate its hydrological database.

The 3-year assignment was entrusted to CAE which carried out the **riverbed discharge measurement service** in the region, confirming its professionalism in field surveys and environmental analysis.

Summary

Location: Aosta Valley Region, Italy

Conclusion: 2021

Focus: Hydraulic and hydrological risk

Challenges:

- Flow measurements on the chosen sites for 3 years in order to develop and/or update the rating curves of some water courses

CAE solutions:

- 70 annual surveys on the 24 sites for a duration of 3 years;
- Flow measurement in different conditions: low, moderate and full;
- Equipment: hydraulic reels and propeller sets, kits for suspended and the ADCP sensors on floating supports and chemical probes for measuring electrical conductivity

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FEATURES

The discharge measurements, both planned and on request, were carried out within the territory of the Aosta Valley Region, limited to the **watershed area of the Dora Baltea River and its tributaries** in the different flow conditions (low, moderate and and high level) with current-meter and salt dilution methods.

In the Aosta Valley region, it is certainly complex to perform the discharge measurement and to develop the related **rating curves**. In winter, due to the combined effect of snow and hydroelectric use, the hydraulic heads in the riverbed are particularly low.

However, during the **moderate and high-level phases**, due to the melting snow, the water speeds involved can be significant. The same as the presence of solid and material movements which must always be considered, given the torrential regime of the river sections to be analysed.

COMPOSITION

The **70 annual surveys** were carried out on the **24 sites** for a duration of **3 years**. The most interesting characteristics of the instrumentation available to each technician team of CAE were the hydraulic reels and propeller sets with different diameters, kits for suspended measurements with different weights and the indispensable ADCP sensors on floating support sand chemical probes for measuring electrical conductivity.

The **instrumentation** is then completed with the use of scanning total stations to read the free surface of water in cases it is difficult to read the staff gauge.

Among the qualities especially appreciated by the clients, we can mention the **solid company organization** that allowed CAE to employ the operators with certified experience, who were equipped with the **complete and adequate instrumentation** to perform the service.

With this contract, once again CAE proved to be a valid partner for the public administration authorities by guaranteeing the supply of **reliable services** and important **technical know-how**.