## THE WINTER SERVICEABILITY IN MOUNTAINS ON AN INTERNATIONAL AXIS

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## **ABSTRACT**

The Direction Interdépartementale des Routes Sud-Ouest (DIR Sud-Ouest) manages 950 km of national roads in the south-west of France.

The DIR Sud-Ouest is in particular responsible for the winter maintenance of the axis E9 Amsterdam-Barcelona when crossing of the Pyrenees (RN 20, which rises to 1550 m), and of the french access to the Principality of Andorra (RN22, which culminates at 2100m). It also ensures the winter service of the RN 320 via the Puymorens pass (1920 m) and the RN 116 between Perpignan and Bourg-Madame (Spanish border).

In these areas, the bad frequent and severe winter weather (heavy snowfall, snowdrifts, risk of avalanches, ...) causes specific difficulties in the traffic flow, and the period of winter maintenance lasts six months, from November to April.

In this mountain area, the traffic consists of different types of users and vehicles:

- LV of local users associated with economic activity,
- LV of tourists travelling to the Principality of Andorra and to the winter sports resorts
- International HGV between France, Spain and the Principality of Andorra

On such roads, it is important to be proactive in accordance with the weather forecast, and to be coordinated; otherwise, there's a significant risk of generating quickly a major crisis with people being immobilized and therefore suffering in extreme climatic conditions of mountain.

The three action levers which are detailed in the article are : to ensure the passability, to manage the traffic, to inform the users.