



Presentation of PROCAB

PROCAB (Conception et Validation de systèmes de **PRO**tection de **CAB**ines de Conduite Ferroviaires intégrant les aspects biomécaniques en cas de crash) is a 36-months project of a cost of 4,06 M€.

The project seeks for three major goals :

- To acquire numerical modeling means adapted to rail to be able to predict the driver's comportment in case of a crash, and injuries related (to include biomechanics in numerical modeling);
- To acquire means of testing and measuring adapted to rail to be able to perform biomechanical tests;
- And to investigate, to develop and to validate means of protection on the driver's desk / in the cab to minimize injuries to the driver.

Bombardier Transportation France is the leader of the project. BT is supported by two partners : LAMIH and Stratiforme.

LAMIH (Laboratoire d'Automatique, de Mécanique, et d'Informatique industrielles et Humaines) is a laboratory of Université de Valenciennes (UVHC). Professors of LAMIH are experts in crash tests for the automobile industry.

Stratiforme's activities consist in the implementation of thermosetting plastics in four sectors : railways, military, building trade and industry. Stratiforme will provide the driver's desks for testing.

To achieve the project, we will first define crash test parameters. Then we will perform crash tests including a Hybrid III dummy to simulate the driver. We will develop a numerical model that we will correlate with the tests results. Finally, we will be able to determine means of protection for the driver.