A Methodology on how to certify transportation containers

CEA develop any transport containers which must respect AIEA norms to obtain suitable agreements.
This paper will present the methodology we use to conceive and validate the containers and to obtain agreements.
The conception of the container depends on the kind of agreement it must obtain and the associated AIEA norms it has to respect.

For a type B agreement, the container must answer to Transport Normal Conditions (TNC- 1m20 fall) and Transport Accidental Conditions (TAC - a 1m fall on punch, a 9m fall on rigid wall and 800°C fire).
This presentation will focus on the validation stage of the 9 meters falls.

Firstly, we will present the methodology. Some preliminary LS_DYNA calculations enable to discriminate the more penalizing fall axis; the criteria for this will be detailed.
A test is then done with this fall axis. The numerical model is compared with the test data and is improved. Thus, the model enables to perform extrapolations to other axis and other operational conditions.
Secondly, two examples of containers are detailed: one named “cork” and one named “balsa”.
In the third time, we will focus on the numerical modelling of screwed connections and on the use of instrumented screws in the tests. A validation test for the instrumented screws on a simplified specimen will be detailed.