

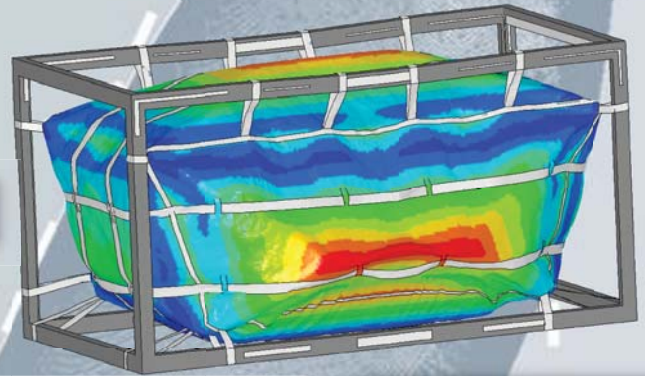
Advanced technologies for bomb-proof cargo containers and blast containment units

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A **small quantity of explosive**, below the threshold of the detection instruments, could get **undetected**. This risk makes necessary the introduction of **countermeasures to reduce the effects** of on-board explosions. **This is the idea behind FLY-BAG** (European projects within the Seventh Framework Programme).

Project objective

Development of a **flexible textile-based luggage containers** able to **resist a small to medium explosion** by retaining fragment projectiles, thus protecting the main structure of the aircraft and dissipating the blast energy.



Project activities and output



Study, selection and **characterization of textile and composite materials** subjected to blast loading. **Calibration and validation of materials constitutive models** for the full scale simulations on board.



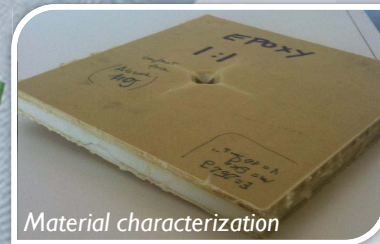
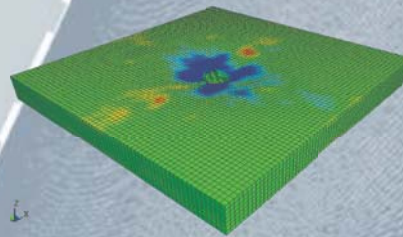
Selection of **CAE methodology** for the predictions of blast waves effect on aircraft structures.



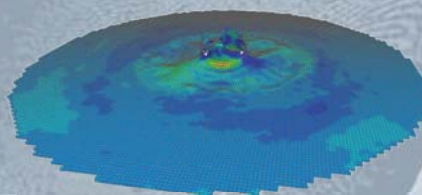
Validated Engineering Simulation for the prediction of the behavior of the aircraft structure and of the Fly-bag mitigation system in case of blast.



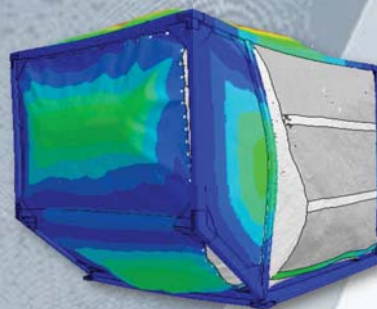
A full range of textile products (cabin, cargo and pallet versions) for the protection of aircraft structures and passengers from onboard detonations.



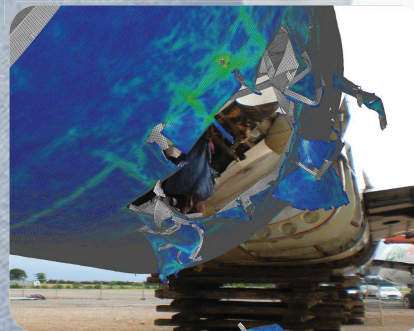
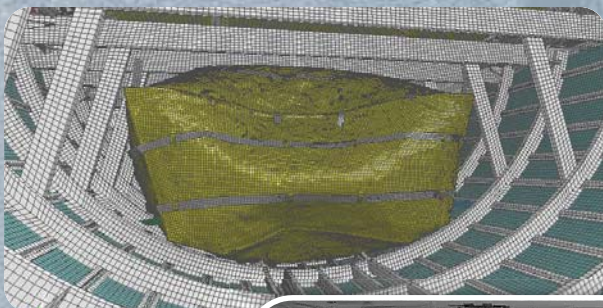
Material characterization



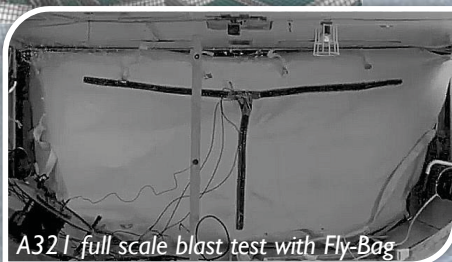
Validation of materials models



Blast test of the Fly-Bag AKE version



A321 full scale blast test without Fly-Bag



A321 full scale blast test with Fly-Bag