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.