

# ASSESS Target Object Development

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## FTSS in the ASSESS project

FTSS works together with several OEM's universities and test laboratories in the ASSESS Project (Assessment of Integrated Vehicle Safety Systems) (see: [www.assess-project.eu](http://www.assess-project.eu)). One of the FTSS tasks in the ASSESS project is to develop a prototype Target Object that simulates a car as an opposite for the subject car in pre-crash sensor system testing.

## Target Object Development

The ASSESS project has set challenging requirements for the Target Object to be developed. The main requirements are:

1. Dimensions and shape based on European mid-size family cars like Opel Astra and VW Golf V
2. Aerodynamically stable up to a speed of 80 km/h
3. Crash forgiving up to 60 km/h (optional 80 km/h) for frontal and 40 km/h for lateral impact. (no damage to the propulsion system nor the subject car)
4. Visual and Radar Cross Section characteristics according to real cars
5. Usable on several laboratory systems

The design has used the "SoftCrashTarget" developed and prototyped by Daimler as a starting point. Target Object will use the principle of vented air cushion to dissipate the impact energy. The principle is illustrated by a test at Daimler in which a 200 kg box equipped with a vented box was impacted with a car at a speed of 40 km/h (see Figure 1). (The video of that test can be viewed on the FTSS website).

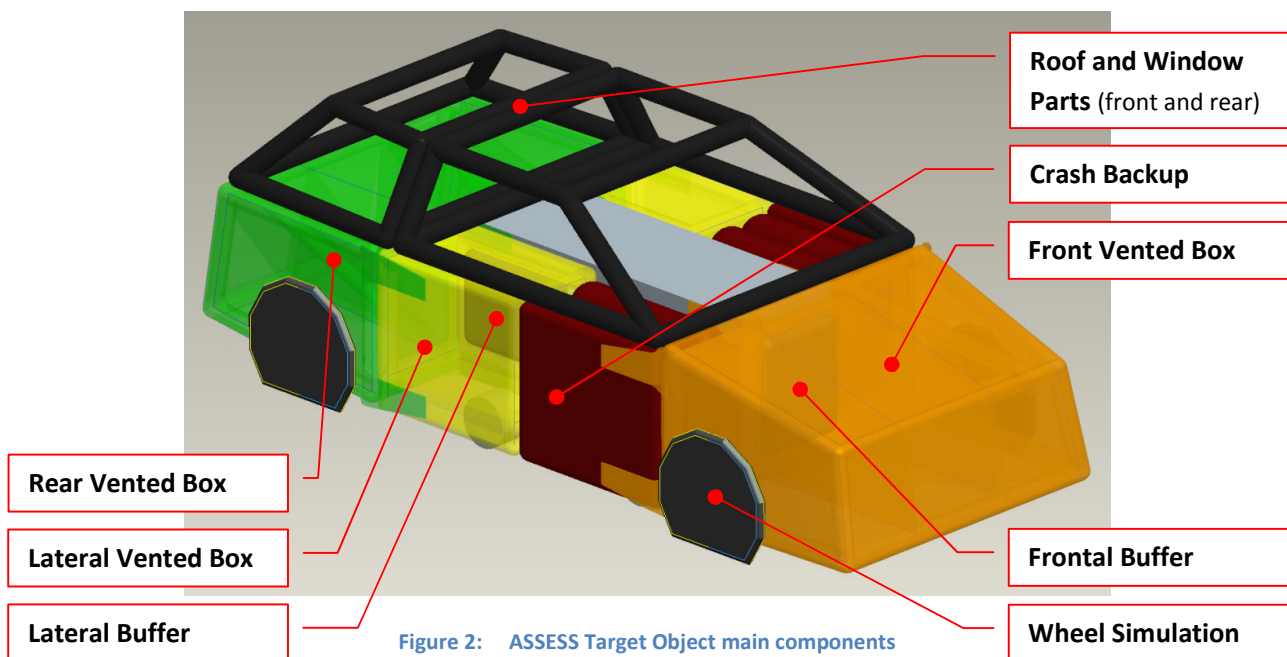


Figure 1: Car impact test at 40 km/h into a 200 kg box behind a vented air cushion (with courtesy to Daimler)

## Description of the ASSESS Target Object

The ASSESS Target Object has the following overall dimensions Length 4200 mm, Width 1750 mm, Height 1480 mm (from the ground). The ground clearance will be 170 mm. It consists of the following main components:

1. Central box with the external dimensions L x B x H = 1840 x 600 x 970 mm (H measured from the ground). This is a Laboratory specific component containing the Target Object propulsion system.
2. Front and Rear Vented Boxes (depth 1180 mm) are divided in three separate compartments.
3. Two identical Lateral Vented Boxes covering the entire Central Box side in case of lateral impact.
4. Two Crash Backups mounted on both sides of the Central Box behind the Frontal or Rear Vented Box to provide sufficient stiff backup for the crash exposed vented box over the full target width.
5. Two Roof and Window Pillar Parts to simulated the front and rear window area.
6. Wheel Simulations to simulate the wheel and wheel well area.
7. Bottoming Out Buffers to prevent hard contact in case the vented boxes bottoms out.
8. As add-ons car specific features such as active navigation lights, number plate and radar cross section will be added to the Target Object.



## Prototype schedule

Within the ASSESS project FTSS will provide two prototypes for evaluation testing. The prototypes are scheduled to be available in June 2010.

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