

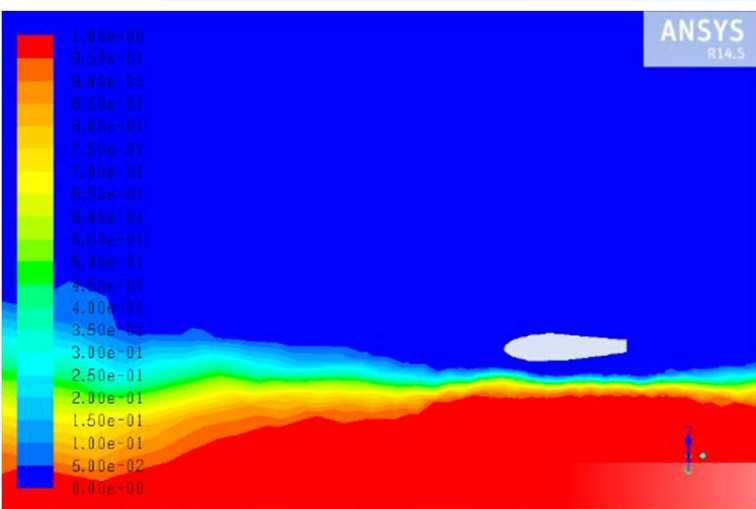
Determining the Effects of Water Landing on Unmanned Aerial Vehicles (UAVs)

Perform Cost-Effective Virtual Testing

- Depending on the UAV's size and its payload, an unplanned water landing, or ditching, can cause damage costing thousands or millions of dollars and even result in the loss of the entire system.
- Performing flight tests of a water-landing maneuver for a new UAV design is not practical because of the time and cost involved.

ANSYS in Action

- Employ ANSYS CFD software to accurately simulate a wide range of water landing scenarios.
- Consider multiphase flows, the compressibility of water and very small computational time steps required to capture impulse loading.
- Perform 20 different water-landing simulation cases for a new UAV.



Key Results

- Assist UAV operators in determining the best procedure to execute a water landing maneuver.
- Avoid a costly and high-risk flight test campaign.
- Substantially reduce the time and cost required to design the UAV.

Potentially save thousands or millions of dollars

Perform cost-prohibitive testing

Steep descent water landing

“The CFD simulation of the UAV landing on water yielded valuable results and insights that were used in the airframe’s structural design to enable it to withstand impact with the water.”

Keen Ian Chan
Principal Engineer
Singapore Technologies Aerospace