**simulate\_edl**

***Calling Syntax***

[t,Y,edl\_system] = simulate\_edl(edl\_system,planet,mission\_events,tmax,ITER\_INFO)

***Description***

The function simulate\_edl computes the EDL dynamics (position, velocity, acceleration, fuel mass) continuously, while simultaneously updating the EDL system struct input when critical mission events occur in the landing procedure. The function will also check whether the simulation runs within the allotted time span, and will terminate if not.

***Input Arguments***

edl\_system struct Data structure containing EDL system definition

planet struct Data structure containing planet definition

mission\_events struct Data structure containing mission event parameters

tmax scalar Defines maximum simulation time span

ITER\_INFO input Optional Flag that displays detailed iteration information if called

***Output Arguments***

t vector A Nx1 vector of elapsed time [ s ]

Y array A Nx7 array of simulation results containing EDL velocity,

acceleration, current fuel mass, accumulated error, and

positional rover dynamics relative to the sky crane.

edl\_system struct Data structure containing EDL system definition, updated to

correspond to all mission events being processed in the function