

International Space Station End-of-Life Probabilistic Risk Assessment

The International Space Station (ISS) end-of-life (EOL) cycle is currently scheduled for 2020, although there are ongoing efforts to extend ISS life cycle through 2028. The EOL for the ISS will require de-orbiting the ISS. This will be the largest manmade object ever to be de-orbited therefore safely de-orbiting the station will be a very complex problem. This process is being planned by NASA and its international partners. Numerous factors will need to be considered to accomplish this such as target corridors, orbits, altitude, drag, maneuvering capabilities etc. The ISS EOL Probabilistic Risk Assessment (PRA) will play a part in this process by estimating the reliability of the hardware supplying the maneuvering capabilities. The PRA will model the probability of failure of the systems supplying and controlling the thrust needed to aid in the de-orbit maneuvering.