# 2.3 Safety and Security 1

There are multiple safety aspects to consider with an autonomous refueling station in space. First of all, space as an environment is very dangerous and hostile to everything. Radiation from the Sun is especially high and can often cause large temperature fluctuations which could be problematic for the fueling tank or possibly for metal prone to stretching. Furthermore, small objects often zoom around at high speed while hitting our machinery. This is known to destroy equipment quickly if not considered. Finally, the fact that it is so hard to get up to space makes maintenance a very expensive and possibly unavailable option which must be taken into account. Still, even when not considering space, there are multiple more threats. The highly explosive rocket fuel must be protected properly from heat and sparks. Spillage of the fuel into space is also not wished for from an environmental aspect, so a properly sealed pumping system is important.

As for security, the most likely threat will be hacking. This means a strong firewall and proper encryption of communications is important. There has also been cases of espionage and satellites being captured physically by foreign enemies. This means the system should be able to protect itself in some way from capture or attempts to steal fuel or spy on its tech. Possible solutions to these problems are to simply run away when unidentified objects approach, or to mount some sort of defense system to the station. However, as space is considered neutral, it might not be a smart solution to bring weaponry to space, as this might be seen as an act of aggression. Simply making the system visually uninteresting, and making sure its docking station is locked and its location tracked could also be enough for the foreseeable future, as going to space is not an easy endeavor in itself.