Space-based Earth Observation is a vital component in monitoring climate variables such as sea ice and sea surface temperature. These variables are input into Earth system models and are used to help predict future climate trends.

Research will examine new methods of performing this space-based Earth Observation through investigation of advanced orbital mechanics and future space systems. Therefore, allowing the collection of more data and a better understanding of climate trends without necessarily increasing the size of spacecraft required.

Enhanced Earth Observation through exploration of near-term non-Keplerian orbits and low-thrust propulsion technologies for the extension of existing Earth orbits.

Areas of research include:
- Extension of Sun-Synchronous orbit using low-thrust propulsion.
- Investigation of thrust optimisation.
- Extension to controlled formation flying.
- Consideration of high thrust propulsion.
- Extension to observation of other bodies in the Solar System.

Research into the control of distributed subsystems to allow the implementation of technologies such as remote power generation.

Areas of research include:
- Means of ensuring inter-dependent subsystems are in adequate range of one another.
- Development of flight strategies to minimise propellant requirements of such systems.
- Possibilities for module redeployment on mission completion.
- Development of in-orbit infrastructure to service mission needs e.g. Power generation.

Large number of small, low-cost spacecraft can be launched simultaneously on a single launch vehicle to create a constellation.

Investigation into the relationship between the required number of launches to give continuous global coverage, propellant requirements of the spacecraft and the ground repeat visit delay.