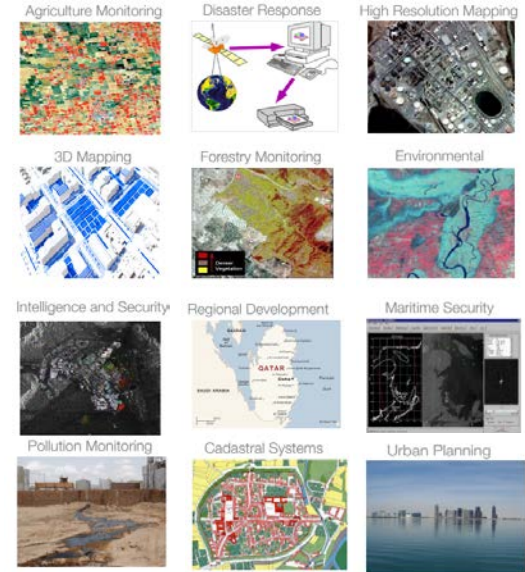




## Instrumentation and Data Handling for Low-Cost EO

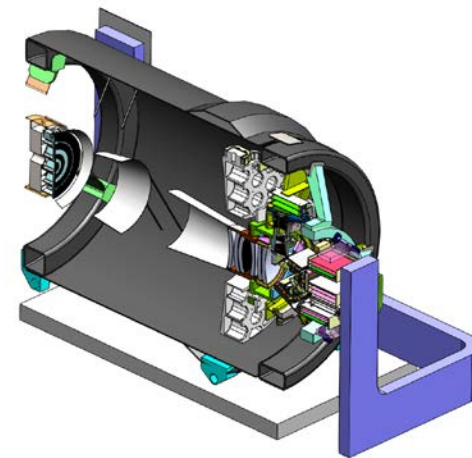
# Summary

- Disruptive step change in low cost precision imagers and their supporting payload chain
  - Highly innovative Earth Observation sensors aboard a future constellation
  - Associated payload data chain to support
  - Novel technology to enable real time responses to the data
- UK investment producing a competitive advantage
  - “Made in the UK” and “owned in the UK”
- Securing a significant return on investment for UK industry
  - Anticipated preferential access to the downstream data



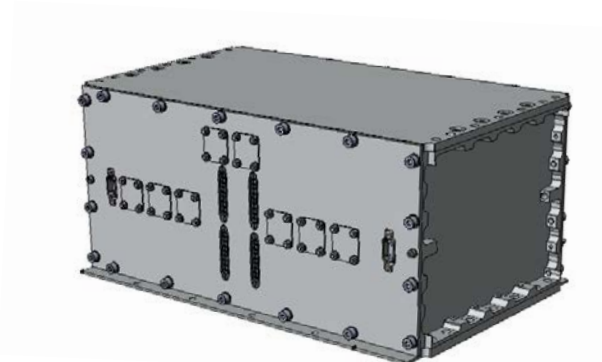
# Low cost precision imagery

- Provides 0.5m High resolution PAN Optical still imagery and ultra HD video
- The Optical Tube Assembly (telescope) includes a large primary mirror whose design and mounting technology represents a departure from previous SSTL design.
- The Pushbroom Focal Plane Assembly (FPA) channels light from the telescope to various panchromatic and multi-spectral CCD and CMOS detectors



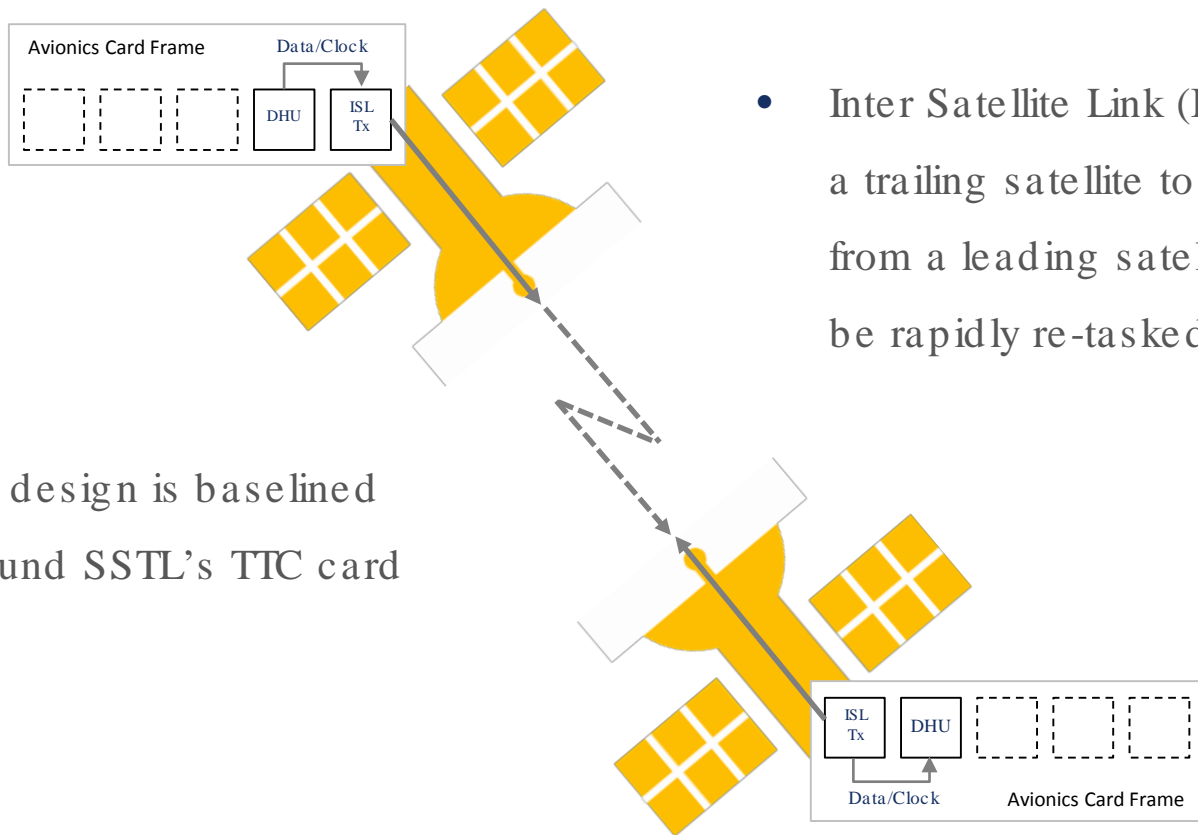
# Payload Data Handling Unit

---



- Heritage solution utilised a High Speed Data Recorder (HSDR-16GB) with a non-volatile Flash Mass Memory Unit (FMMU-256GB)
- High resolution and duty cycle imaging payloads = higher data rates (>10 Gbit/s), larger data storage
  - Up to 30Gbps, 3 Tb on-board memory
  - Reconfigurable card based system = different payload configurations and storage requirements.

# Real time use of Data



- ISL design is baselined around SSTL's TTC card

- Inter Satellite Link (ISL) enables a trailing satellite to receive data from a leading satellite so it can be rapidly re-tasked