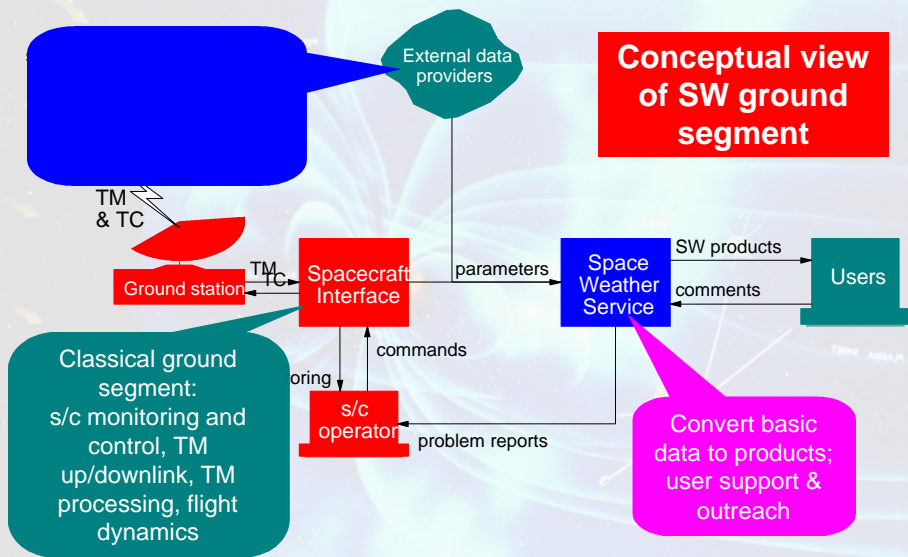
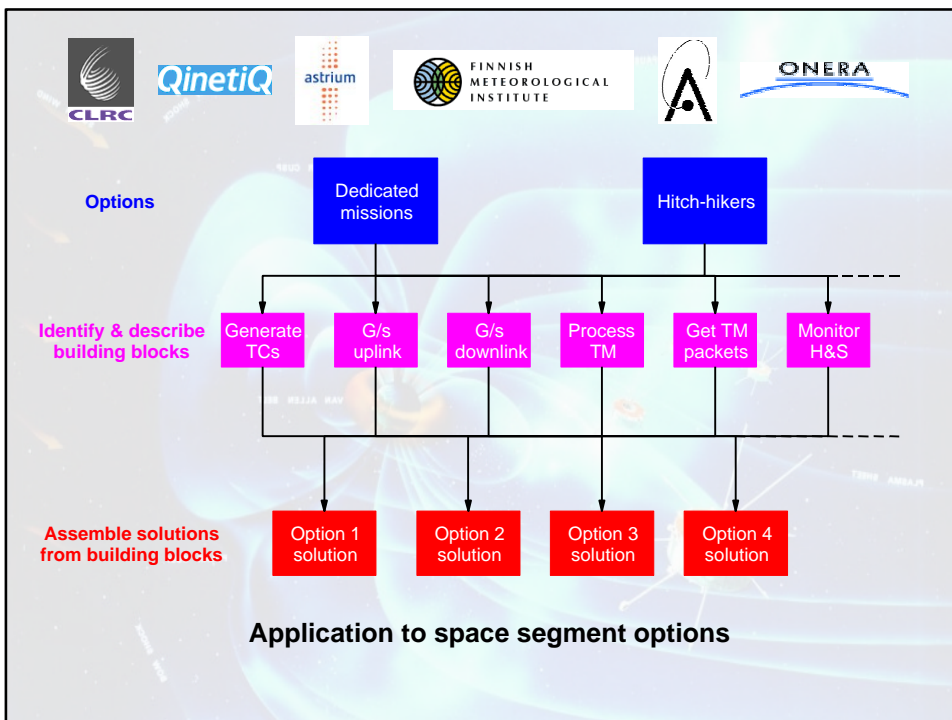
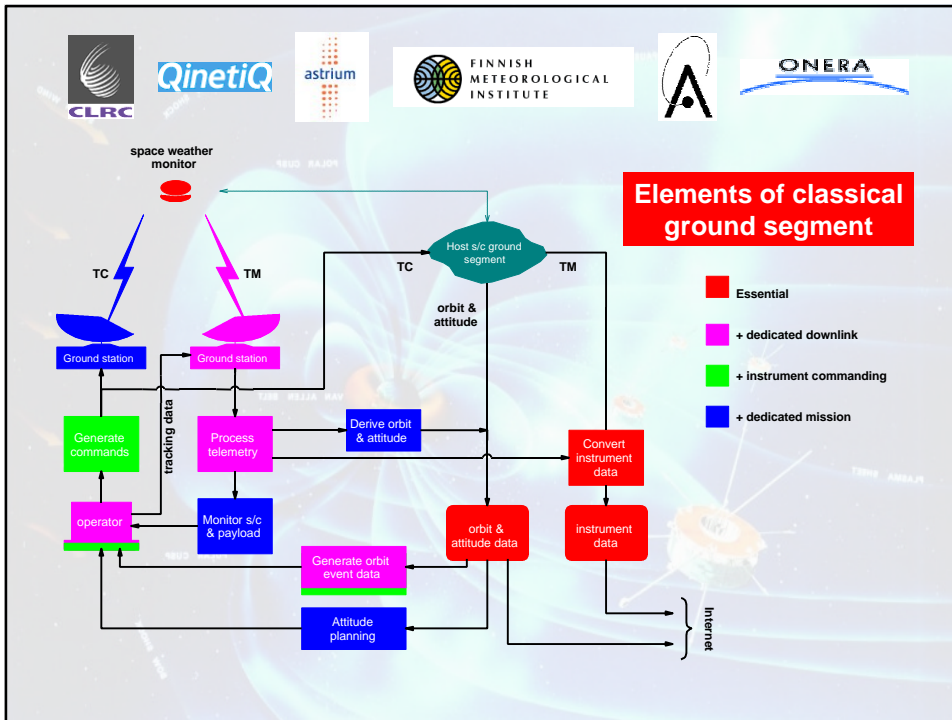




ESA Space Weather Study,
 Final Presentation:
Ground segment
 Mike Hapgood
 CLRC Rutherford Appleton Laboratory
 6 December 2001, ESTEC







Example of results - costs for dedicated missions

Description	Set-up (MEuro)	Operations (MEuro/year)
Solar wind/HMF + solar proton monitor at L1	4.2	2.0
Solar observer	4.2	2.0
Rad belt missions	4.3	4.0
Coronagraph to L4/5	3.2	1.9
Coronagraph, Radio Wave Detector	3.5	1.9
Auroral imager, Debris monitor	3.2	1.7
Auroral imager	2.9	1.7
Magnetometer (SWARM)	3.1	4.0

Cost drivers are ops team & s/wps team & ground stations

Extra ground stations needed



SPACE WEATHER SERVICE

- Developed set of user requirements for space weather service
- Then prepared conceptual model of service architecture (see next slide)
- Analysed this to derive Service Functional Requirements (SFRs) and Service Implementation Proposals (SIPs)
- Will need versatile retrieval of data from space segment, other missions and ground-based sources:
 - protocols (HTTP, FTP and SMTP)
 - initiation procedures (fixed time, local or remote)
- Large baseline set of models suitable for implementation within a space weather service

