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ASSESSING THE IMPACT OF APPLYING MODULAR SYSTEMS ON THE SPACECRAFT  
THERMAL DESIGN

**Abstract**

Earth Observation is expanding quickly, many large constellations of small satellites are planned and being developed with major backing from industry. This has brought about a change in spacecraft design and verification philosophy. One of the means of reducing costs and incorporating flexibility is modularity. Modularity however is a term that can be applied in many different ways. When considering modularity concerning thermal design, we have to consider how present thermal satellite design is being implemented and how modularity can be introduced at either subsystem or even system level. There are several modular concepts in place, most of which include a thermal design. Some of these concepts will need to be compared to the current thermal implementation process to assess if a project benefit will accrue from a thermal modular approach. So the questions are, how should a thermal modular design be implemented and when is it useful for savings on cost and increasing the flexibility of the system. These topics will be addressed.