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Title	The Impact of Environmental Conditions on System Reliability and Proposed Solutions
Abstract	<p>The environmental conditions temperature and humidity / moisture are known to affect equipment and system reliability. However it is difficult to quantify the impact of these conditions as it is frequently not possible to identify when a given failure has been caused by them. For instance, equipment bay configuration and Environmental Control System (ECS) architecture can lead to 'hot spots' in bays where equipment can be subject to excessive temperatures. Furthermore, humidity and/or free moisture in systems can cause transient faults which cannot be reproduced during ground testing post flight. These 'No Fault Found' events are problematical because they generate costly maintenance actions for no effective resolution.</p> <p>The project is in two parts and will aim to:</p> <ul style="list-style-type: none"> ▪ Assess the true environmental conditions on equipment and system reliability ▪ Investigate Advanced ECS architectures and propose solutions for improved equipment bay conditioning through: <ul style="list-style-type: none"> ○ Better control of the temperature environment ○ Better water extraction and other control features to reduce the amount of humidity and free moisture in the ECS