Planetary Rovers Design and Operation - A system View

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ABSTRACT

As Europe looks at exploring the Moon and Mars, concepts for a range of rovers are being proposed to explore these new and hazardous places. While cross-over of technologies can be sought across missions, the fundamental differences in the environment (Moon and Mars), mission concept (science rover or long range cache retrieval) and the operational scenarios (autonomous or tele-operation) will call for potentially very different implementations.

This talk will presents both Martian and Lunar rover concepts from a systems perspective, as well as their similarities and specific differences. It will also discuss how, in the same way the design of sub-systems will influence each others, key design drivers can be assimilated to "systems" with their own performance and driving criteria. This consolidated systems view allows the setup of a more complete system view, allowing one to optimise and converge towards a practical implementation quickly.