

Use of microcontroller for next generation platforms

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Two CNES R&T studies using architectures based on microcontrollers are in progress since 2009. The first one concerns the problem of the electronic balancing of batteries lithium / ion, the second is dedicated to a system of active thermal control.

Both systems are based on architectures using an internal data communication bus where different terminals are connected. To reduce at least the mass and the volume and assure the necessary different functions for the internal communication as well as the implementation of the electronics, the microcontrollers are used.

Having defined the architecture and the functions required from the systems, the performance required for the microcontrollers is estimated and a trade-off is made to hold only certain reference number.

Since representative breadboards were performed and the results of the tests will be presented.

Some information on tools of development and programming of microcontrollers will be communicated.

A new study will begin in 2011 to estimate microcontrollers and define the necessary peripherals in a spatial environment.

To conclude, we would try to give a return of our experience and how we envisage the future on these studies.