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OUFTI-1 a ULg students CubeSat



The OUFTI-1 team at EuroSpace Center - Redu

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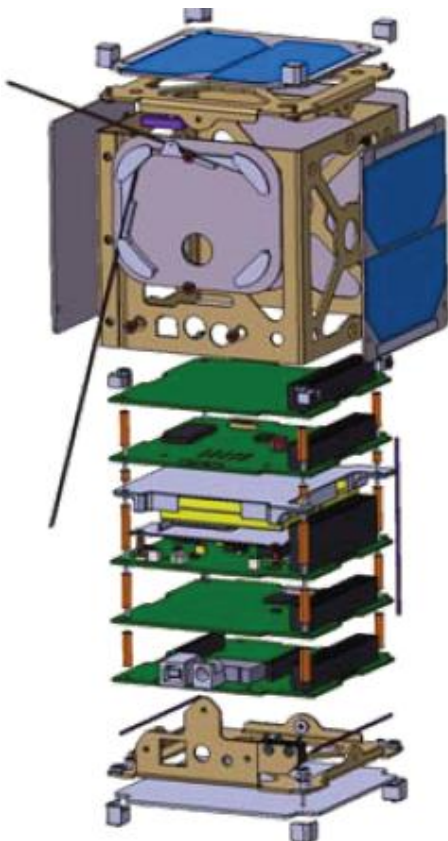


OUFTI-1 the current state of development Montefiore Institute of the University of Liège

Fifteen students are currently working nearly full-time on OUFTI-1, so technical advances are numerous! At on Wednesday, June 29, 2011 the OUFTI-1 team presented the current state of development of the first Belgian student nanosatellite and recent realizations in the OUFTI-1 project, as well a demonstration of ongoing activities.



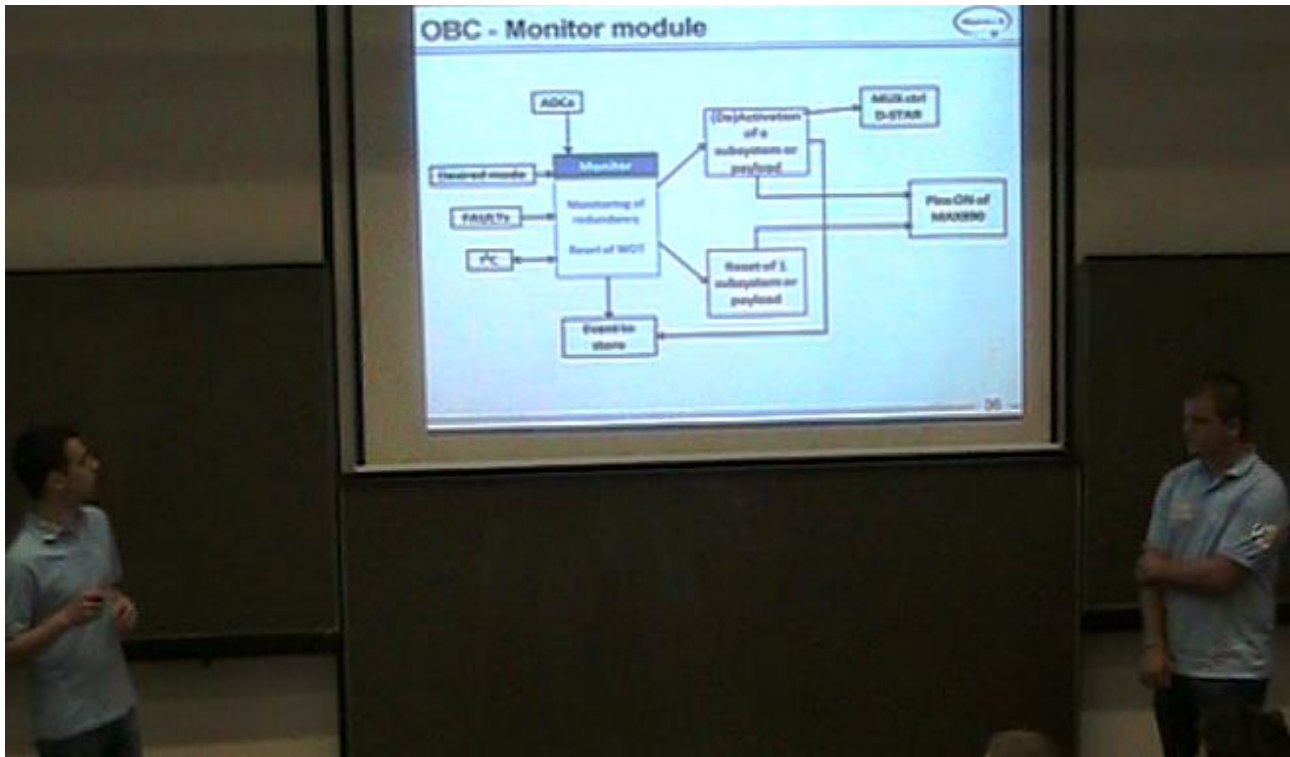
Amandine Denis, ON4EYA, project manager gives an overview of the project.



The OUFTI-1 team is currently concluding its first review process. This technical review focuses on interfaces (i.e. mechanical, electrical, thermal, and operational boundaries between subsystems), since there was a crucial need to check and definitively fix them. The so-called Interface Technical Review (ITR) appears to be also an excellent opportunity for education: students get familiarized with a process widespread in industries and agencies.

Different activities took place following a rigorous procedure inspired by the current standards at the European Space Agency (ECSS). Students fulfilled data-packages defining the interfaces of their subsystems, which were then reviewed by panels (composed of professors and industrials).

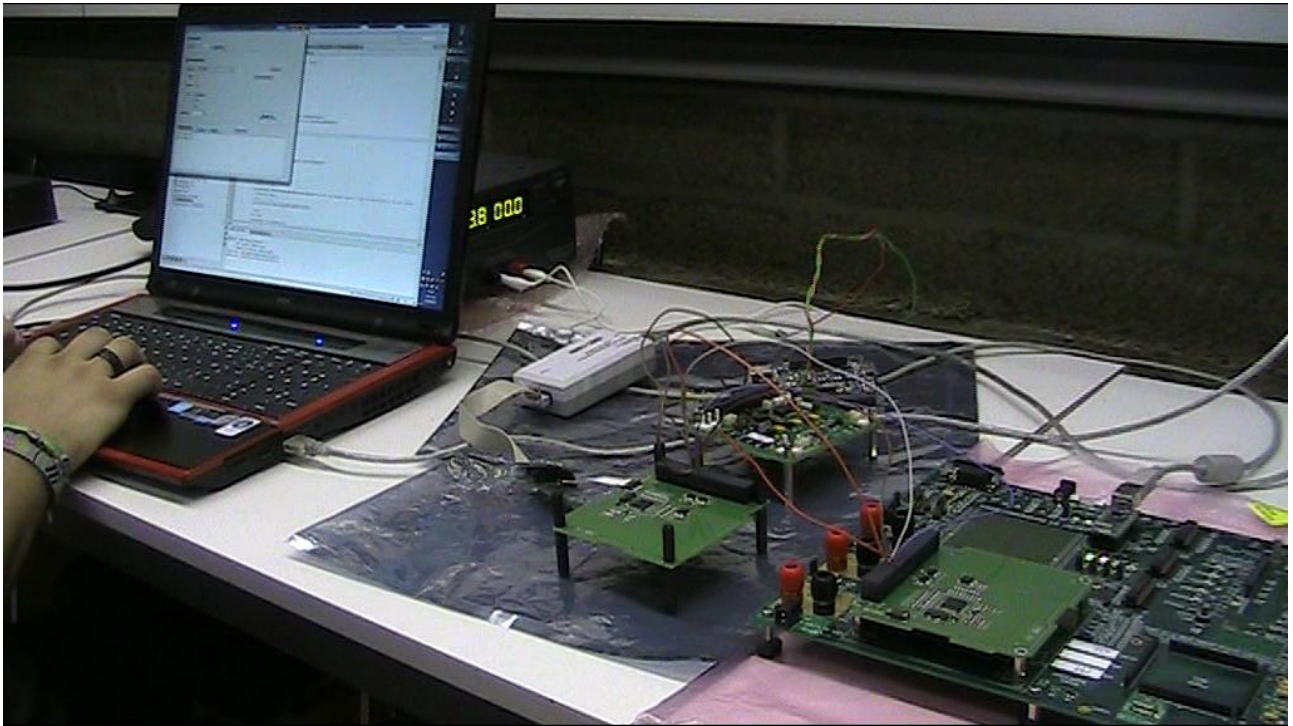
These panels formally emitted comments and remarks, which were answered by students. These answers were discussed during a weekend gathering the whole team and the panels at the EuroSpace Center.



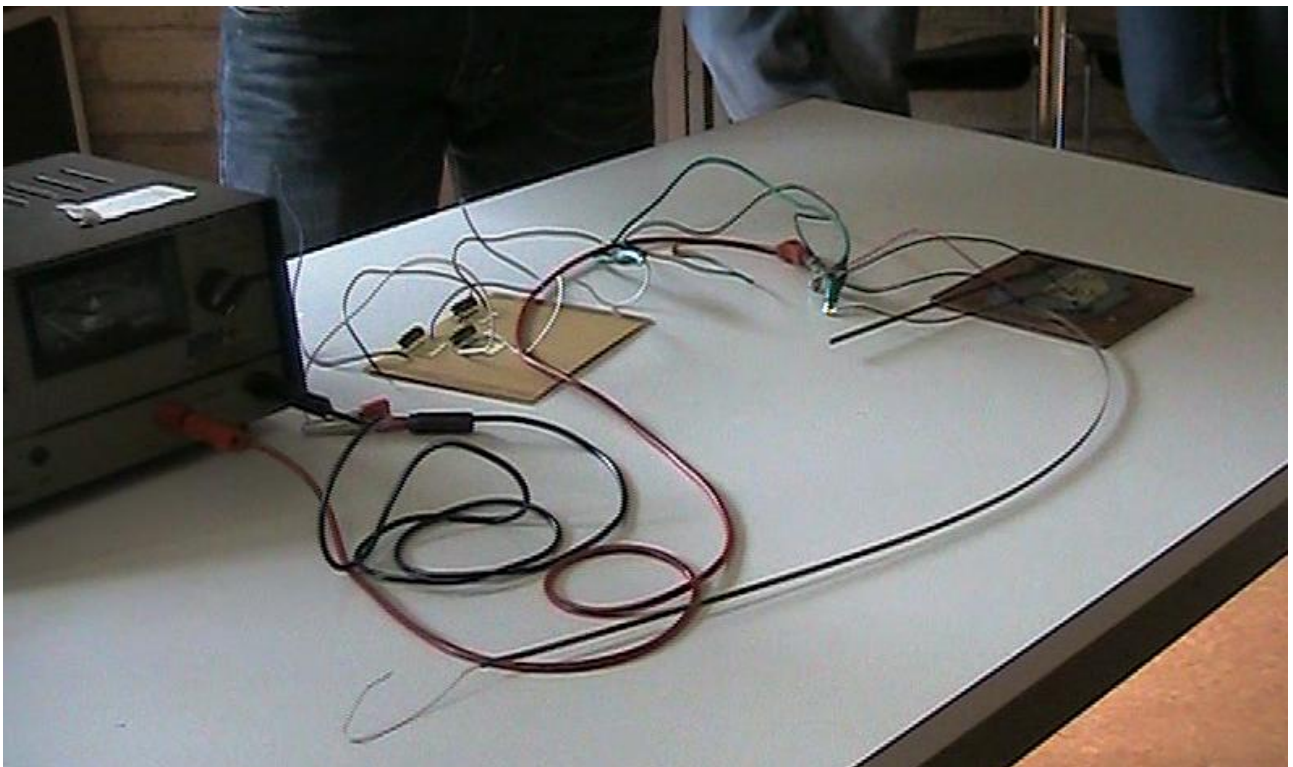
OBC, on board computer – technical presentation

The on-board computer (OBC), in short, can be said to be responsible of all high-level monitoring and control tasks aboard the satellite. More precisely, the following roles are attributed to it.

- Perform the initial satellite operations (antenna deployment, first activation of the other subsystems) according to a predefined sequence.
- Interface with the radio-communication circuits, and perform AX.25 and D-STAR encoding and decoding.
- Handle telecommands received on the uplink channel.
- Perform measurements aboard the satellite.
- Store relevant measurements until they can be sent to the ground station.
- Respond to telemetry request by sending present or past (stored) measurements.
- Provide a time reference.
- Perform electrical power supply management, by enabling and disabling other subsystems in predefined conditions (e.g. when battery voltage is too low).
- Perform power cycling in case of latch up in a subsystem (detected with a signal)
- Manage the experimental electrical power supply, by enabling and disabling it in predefined conditions.
- Manage the D-STAR payload, by configuring it (e.g. for Doppler compensation) according to data received by specific telecommands.



OBC, on board computer – practical demonstration



2m and 70cm antenna deployment – practical demonstration

A video report of the current state or development presentation will be within some days available on YouTube. Watch www.youtube.com/user/ON7UX