

SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)  
Tools and Technology in Support of Integrated Applications (1)

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AUTONOMOUS AND COORDINATED OPERATIONS OF A NANOSATELLITE WITH A ROBOT  
ON EARTH**Abstract**

The design of nanosatellites is improving rapidly and with the pass of time, their functions are expanding even further, allowing more capabilities as well as new functions. Not only that, if the nanosatellites coordinate with other instruments, which could be others nanosatellites or even bigger satellites, or robots on Earth, these devices show a great potential to increase the fields for applications, such as weather monitoring, topographic analysis of an area, etc. In this work, we study that possibility, taking as basis the development of software capable to coordinate the telemetry received from a drone to operate a robot on ground. In the past two years, the Unmanned Aerial Vehicles (UAV) is becoming a trend in today's world; the use UAV has taken a bigger relevance, not only speaking of military uses or surveillance as well, but in more commercial applications. Therefore, with the aim to give this work a practical application, we study the functionality of the system on disasters and emergency cases, giving information and support to the aid staff. The drone and the robot work using the communication between each other, using the information given by the sensors on an autonomous way. The results show that alternate routes on a terrain can be found, giving information to a user at the same time, allowing him to follow-up the task execution between the two devices.