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the TASTE mission: In situ DEIMOS terrain analyzer with smalls and miniturized lander

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Deimos and Phobos are considered primary targets of investigation to understand the origin and evolution of Mars and more in general the terrestrial planets of the Solar System.

TASTE mission aims complementing MMX investigation by focusing on Deimos surface, combining both **global remote sensing** observations from a close orbit and **direct in-situ analyses** of the surface thanks to a lander release on Deimos. With a synergy between orbital and in-situ investigations, the proposed mission will contribute to the Deimos global morphology understanding; its global elemental abundance; landing site morphology and texture; landing site organic content and surface composition. TASTE is conceived as a Cubesat-in-Cubesat mission: a 12U space asset composed by a **9U orbiter** and a **3U lander**. The former embarks an **X-gamma ray spectrometer** developed by OAT and a multispectral camera, the second is equipped with a **miniaturized Surface Sample Analyser** (SSA), composed by a new Sample Acquisition Mechanism (SAM), conceived by PoliMi and a Surface Analytical Laboratory (SAL) developed by INAF OAA.

The mission is conceived to keep the orbiter on a QSO nearby Deimos to facilitate the lander release and the scientific operations in synergy with the lander itself. Details on science, space assets sizing and design and mission science operations will be discussed in deep.