
**Space systems — Cube satellites
(CubeSats)**

Systèmes spatiaux — Satellites cubiques (CubeSats)

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Foreword

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Introduction

Recent years have seen an increase in the number of student satellites developed at universities around the world. To date, most university satellites require several years to develop and significant financial resources, making them prohibitive for small programs. New technological developments in small low-power electronics make smaller, lower-cost satellites feasible.

The CubeSat program has developed a picosatellite standard that significantly reduces the cost and development time of picosatellites with a specific form factor. In addition, CubeSats can serve as platforms for in-space experimentation, as well as a means of space-qualifying future small-satellite hardware.

The CubeSat Standard is an evolution of the picosatellites developed for Stanford's OPAL mission. CubeSats are constrained to a 100 mm cube (not including deployment interface rails) with a mass of one kilogram or less. Led by Stanford University's Space Systems Development Lab (SSDL), the CubeSat project is developed jointly by universities and industry worldwide. Within this international community CubeSat developments at the California Polytechnic State University (CalPoly) have been twofold: first, develop the standardized launcher-interface/deployer mechanism for CubeSats, and second, demonstrate the feasibility of developing a working CubeSat using low-cost, commercial off-the-shelf components. The project involves a multidisciplinary team of software, aerospace, manufacturing, electrical, and mechanical engineering undergraduate students.

In recent years, more sophisticated capabilities have been demonstrated in CubeSats by major space corporations and major space customers. CubeSat concepts for inclusion in Mars exploration are in development. Entire companies have been established to solely support the global CubeSat marketplace.

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