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DELFFI: FORMATION FLYING WITHIN THE QB50 CONSTELLATION OF NANO-SATELLITES

Abstract

– INVITED PAPER – QB50 is a mission establishing an international network of 50 nano-satellites for multi-point, in-situ measurements in the lower thermosphere and re-entry research. As part of QB50, the Delft University of Technology will contribute the DelFFi mission comprising two nano-satellites both being equipped with a highly miniaturized propulsion system in addition to the science payload. This will allow to demonstrate controlled formation flying between these two nano-satellites which will enhance the QB50 mission both in terms of technology demonstration and science return. The opportunities and challenges of formation flying by a subset of satellites within a constellation of freely floating spacecraft are systematically identified and analyzed. Furthermore, the concepts for the implementation and operations of the DelFFi mission as well as the nano-satellite bus will be presented.