

SPACE PROPULSION SYMPOSIUM (C4)
Electric Propulsion (4)

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TOWARDS VERY HIGH POWER ELECTRIC PROPULSION

Abstract

In order to prepare for future ambitious but realistic exploration missions, it is necessary to sort the different possible electric propulsion systems with regards to each type of mission requirements, and to rate them in terms of development costs, risks, and duration, in terms of performance (thrust, Isp, total impulse), in terms of overall constraints like environment. CNES and Snecma engaged in a synthetic approach of the electric propulsion scenery up to several 100 kW range, basing on the different studies which were or are currently been performed all over the world, as well as on their own experience. The aim is also to address all potential show-stoppers and to focus on those aspects which may have been less studied or overlooked, industrial aspects on top of them. The outline of development requirements for selected technologies will be described. The paper describes the main results of this study, performed in 2010. It will highlight the outcomes which may be of paramount importance for the decision makers.