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# AIRBUS DS POWER PROCESSING UNITS NEW DEVELOPMENTS FOR HET AND GIT AND NEW TECHNOLOGIES

**Abstract**

The main two parameters used to trade-off the main EP technologies are Thrust/Power ratio and Specific Impulse (ISP). Airbus DS Space Equipment has developed PPU for all major technologies, to answer to these major parameters.

This paper presents the latest PPU development status, presenting the different architectures and product features and the development status for the new technologies to be included in future PPU developments.

PPU for HET, ELEKTRO: The PPU Elektro motivation is to respond to Satcom market towards full Electrical Propulsion solutions.It is flexible and modular equipment with a new innovative concept of PPU, able to drive up to six different thrusters with one single PPU. ELEKTRO is compatible to the main HET thrusters in the market. The product has been fully qualified in July 2017. Product qualification will be presented, including test results to demonstrate the good behavior of the product

New Space PPU for LEO applications (¡ 1 kW): PPU HET low power (LP) is the new Airbus DS PPU for 300W class HET thrusters that have been developed for constellation applications. It is a flexible and disruptive design based on automotive grade parts to answer the latest space market trends for new space applications. Development status and main highlight for this innovative design will be presented. Currently this PPU concept is flying with more than 20 years in orbit heritage.

High Voltage new PPUs development covering 5 kW gridded ion thrusters: RIT 2X.and T6/T7. The 5kW PPU designs aims at full electric geostationary satellites. It covers the complete performance range necessary for orbit raising and station keeping. In both cases, PPUs are new generation concepts able to answer to the commercial market trends, in particular: dual mode in voltage to get the optimum performances between thrust to power ratio versus ISP, and product flexibility to change thruster parameters and operation in flight. Product architecture and features will be presented including EQM qualification tests results

Roadmap and new designs: The inclusion of new technologies it is a must to answer market needs. In particular, due to market pressure, threre is a need to significantly improve in performances, costs, mass and volume. The latest status on the maturity for these technologies will be presented and the plan to be used for future developments.