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C4Or1C-04: TurboBrayton cryocooler suitable for on-board electrical propulsion

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Absolut System is building a 40K vibration-free cooler for ESA earth observation program. This application required small cooling power in the 40K temperature range but extremely low exported vibration level, high efficiency and mass competitive technology.

In addition, a scale-up of the product is on-going to offer a lightweight solution for superconducting motors for hybrid-electric propulsion system. The hybrid-electric propulsion system for transport aircraft required extremely high power to mass ratio and the turbo-Brayton cooler offers a very competitive solution.

Finally, the turbo-Brayton technology is also a candidate for electrical propulsion system. This market combine the constraints of the earth observation system and the HTS application for electrical propulsion on-board transport airplane. Asbolut System is then working to combine the two developments toward an integrated solution for electrical propulsion.

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