Accelerated Life tests for Electric drives in Aircrafts

Scheda informativa

Informazioni relative al progetto

ALEA
ID dell’accordo di sovvenzione: 641496
Stato
Progetto concluso
Data di avvio 1 Ottobre 2014
Data di completamento 31 Luglio 2016

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€ 799 676,07
Contributo UE
€ 599 757,06

Coordinato da
UNIVERSITA DEGLI STUDI DI PARMA
Italia

Obiettivo

Reliability in electronics is nowadays one of the most important subjects of study, as the range of its application is very wide.
At the moment, the lifetime problems have been addressed by analysing separately the causes of failure and accelerated tests were proposed for the single components. This proposal aims at realizing a test bed able to apply multiple age accelerating stresses and to realize the on-line test of the machine under different operating conditions. The test rig will embed an environmental chamber able to replicate the ambient conditions at 50000ft, moreover, a custom converter able to vary the voltage stress at the motor’s terminal will be developed, in order to test the reliability of the motor with the converters of the future, that will employ always faster devices.
In the aerospace industry, reliability is an extremely important and researched feature for the electric drive systems. Given the life-span of an actual aircraft and the costs of unplanned maintenance, the results of this research are potentially of great impact in how designers now realize electric drives.
The procedures to realize the test bed, the data acquisition software and the post-processing software that will be developed during the project will be helpful to further push the technology limits. Moreover, the test of actual motors and the data acquired will constitute a database that will improve the existing knowledge of life time models. The ability to modify the actual voltage waveform characteristics of the converter driving the motor under test, in conjunction with the other test facilities, constitutes a great improvement on the existing testing methodology, that usually imply off-line accelerated testing of the twisted pairs.

**Campo scientifico**

/scienze naturali/informatica e scienze dell'informazione/software

**Programma(i)**

**Argomento(i)**

**Invito a presentare proposte**

SP1-JTI-CS-2013-03

**Meccanismo di finanziamento**

JTI-CS - Joint Technology Initiatives - Clean Sky

**Coordinatore**

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Tipo di attività
Higher or Secondary Education Establishments

Contributo UE
€ 521 681,68

Contatto amministrativo
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**Partecipanti (1)**

RAW POWER SRL
Italia

Contributo UE

€ 78 075,38

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Tipo di attività

Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Sito web

Contatta l’organizzazione

Contatto amministrativo

Andrea Stefano Crinto (Mr.)

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