

IAF SPACE SYSTEMS SYMPOSIUM (D1)
Interactive Presentations - IAF SPACE SYSTEMS SYMPOSIUM (IP)

Author: Mr. Josue Airton Lopez Cabrejos
Peru, 2015100447@untels.edu.pe

Mr. Cristopher Alexander Ochoa Villanueva
Peru, 2017100027@untels.edu.pe

Ms. Natalia Indira Vargas-Cuentas

Image Processing Research Laboratory (INTI-Lab). Universidad de Ciencias y Humanidades - UCH, Peru,
nvargas@uch.edu.pe

Prof. Avid Roman-Gonzalez

Business on Engineering and Technology S.A.C. (BE Tech), Peru, avid.roman-gonzalez@ieee.org

AUTOMATED TESTING MODULE PROPOSAL FOR VALIDATING EEE SPACE COTS DEVICES

Abstract

The space sector is one of the fields that has developed the most over time. Systems such as the payload of satellites must be well designed and implemented based on components that meet the necessary conditions for optimal operation in harsh environments, such as supporting the radiation to which they will be exposed once in orbit, vacuum, sudden temperature changes, or some other factor. Components not for special applications typically do not work in the same way under harsh conditions; however, some components can work in space, known as Space COTS. For a regular component to be validated as Space COTS, verifying them under challenging circumstances is necessary. This verification process implies having trained personnel to carry out the required tests. Testing of these components is often done manually. For this reason, this process takes several hours and generates inconveniences; a lot of staff time is dedicated to testing, leaving aside any other activity. In this work, we propose an automated test module to test electrical, electronic and electromechanical components in an automated way. The use of the LabVIEW platform and cheap components, readily available in the market, are proposed. Finally, performance tests of the EEE components could be carried out with a reduction in test time to benefit the space industry.