



HYVISION – AUTOMATIC DEFECTS DETECTION FOR HYBRIDS

Optical Inspection

Artificial Intelligence

Deep Learning

Description : Thales Alenia Space manufactures thousands of hybrid cards for space equipment. Hybrids involve great stakes due to the precision and thoroughness that is required on its small-sized components in the micrometer range. Indeed, the phase of testing and verification of hybrid parts is an essential step that must admit no manufacturing defect. The goal of HyVision is to provide a solution to detect defects in an automatic way using machine learning algorithms.

ROI :

- Automatic defects detection
- Reduce the false alarms rate by 80%
- Facilitate the work of experts

Achievements :



Provide a software solution that directly uses the photos taken by the AOI, with a precision of 2.5 micrometers per pixel to detect defects.



The improvement of the automatic detection of defects is made by the combination of conventional image processing tools (such as shape detection) and innovative machine learning techniques (such as Deep Learning models).



The processing chain thus classifies each image according to the type of defects and makes it possible for the operator to avoid manually classifying each image reported by the AOI: missing footprint, pollution on the footprint, wire torn off the footprint, non-conforming dimension, twisted bond, cut bond, ...

