

Analysis and control of components integrity supported by real-time Artificial Intelligence assistance

Intercontrôle's unique experience in Non-Destructive Examination has enabled us to develop a modular analysis software that helps detect, locate and characterize anomalies in real time and in post-processing.

Challenge

Many industries need Non-Destructive Examination (NDE), quality control or foreign object detection to demonstrate the systems' safe and sustainable integrity. These analyses and reporting take a considerable amount of time and require constant concentration for a sensitive inspection. Operator's concentration is the most important challenge to assist in analysis activities.

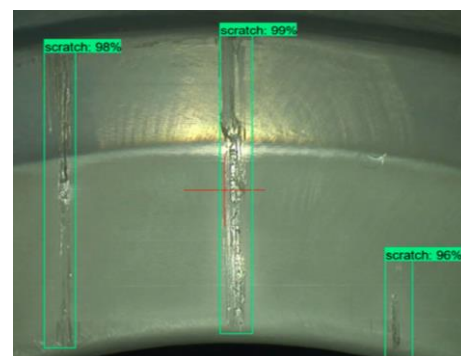
- For on-site NDE, the harsh environment complicates analysis due to limited access to components and specific lighting conditions. The data collected are also very tedious to analyze.
- For Quality Control, we observe an important downtime of the production and a large number of false positive leading to significant profitability loss.
- For Foreign Object Detection, even small migrant bodies, can compromise equipment performance and lead to significant risks, requiring accurate identification.

Solution

Framatome - Intercontrôle Artificial Intelligence Analysis (FAIA) is a software that offers automated support to analysts in Non-Destructive Examination (NDE), quality control, and foreign object detection. FAIA's Artificial Intelligence Model can detect, locate, and characterize anomalies when used as a stand-alone solution or integrated into an existing visual analysis system. The software's interface is tailored to specific needs and desired outputs. The AI computations are performed either on the operator's local servers or on a distant server for optimal performances. FAIA's efficiency is enhanced by its use of specialized data libraries.

- For on-site NDE, the software receives the data in real-time or post-processing, detects anomalies (scratches and cracks), providing assistance to analysts.
- For quality control, the software is integrated in the process to reduce machine downtime and false positives.
- For foreign object detection, an automatic encoder enables the detection of anomalies on images from any type of surface, making the software easy to integrate into an existing process.

These advanced functions and applications enable FAIA to provide optimal support for enhanced analysis and integrity control activities.



Nuclear Power Plant primary circuit tubing inspection with FAIA

Key features

Ready to be deployed in industrial environment:

- Windows based
- Compatible with most AI frameworks
- Real-time video processing up to 30 fps (frame per second)
- Compatible with AI for any visual application
- Database preparation and analysis software are two independent modules
- Automated reporting of defects

Customer benefits

- Significantly improved quality and the lead time of the analysis
- Enhanced localization and characterization of anomalies
- Performance free from the human error and learning extensively from one use case to the other
- Repeatable results
- Adaptable and easy to integrate
- Benefiting from the extensive experience of Intercontrôle

**Your performance
is our everyday commitment**

Contact:

sales.intercontrôle@framatome.com
www.intercontrôle.com

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