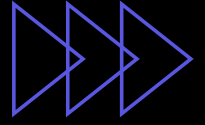# AUVISOL

Inspection System ▷▷▷

AI-powered system simplifies object detection and inspection

Precision and Flexibility in Every Inspection

Overview:

Auvisol's Inspection System is the implementation of an AI-powered system designed to simplify object detection and inspection processes, ensuring precision and flexibility. The system leverages advanced AI to inspect various objects, detect defects, and adapt to new inspection requirements over time.
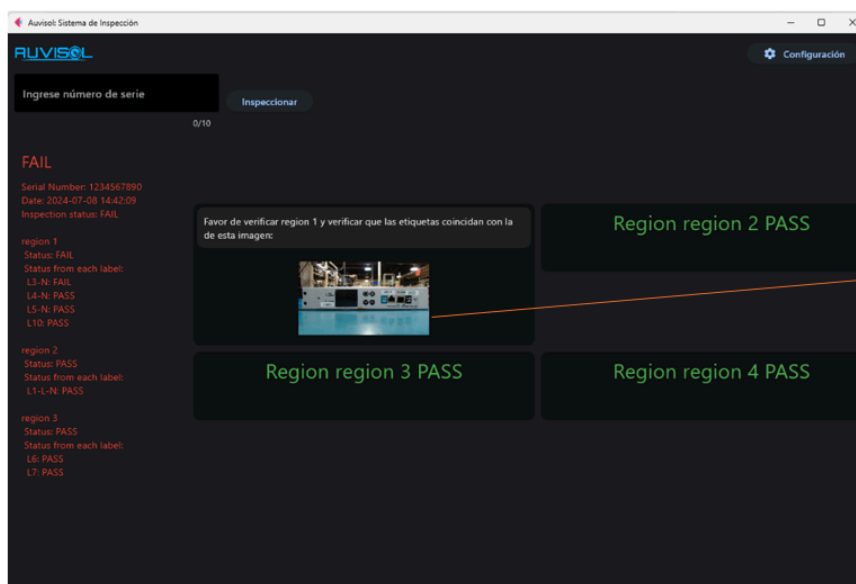
User Interface and Inspection Process

The application has an interface for the operator to use easily:

1. **Position the Object:** Place the piece in a specific position and area
2. **Input Serial Number:** Enter the serial number in the provided text box.
3. **Start Inspection:** Press Enter or click the "Inspect" button to begin the inspection.
- **Pass Result:** If the piece passes, a message on the left will appear in green letters with a **"PASS"**, including assembly data and the status of each label.
- **Fail Result:** If the piece fails, a message on the left will appear in red letters with a **"FAIL"**, also including assembly data and the status of each label.

Interface details

- **Four Status Boxes:** There will also be four status boxes for each zone.
- **Failure Details:** Operators can click on the failed area to view the correct configuration and how the piece should look.
- **Settings Access:** Secure settings menu for authorized personnel to adjust camera properties, resolutions, and other configurations.

The application shows four region that detects different areas of the chassis in order to detect if the labels are installed correctly according to the specification (compared with the golden sample).

It has a text box to put the serial number, after putting the SN then click in inspect button to run the test.

On the left side is shown the specific failure according to the specification, for example in this picture its shows region 1 inspect 4 labels but one of these is not installed correctly, resulting in failure.
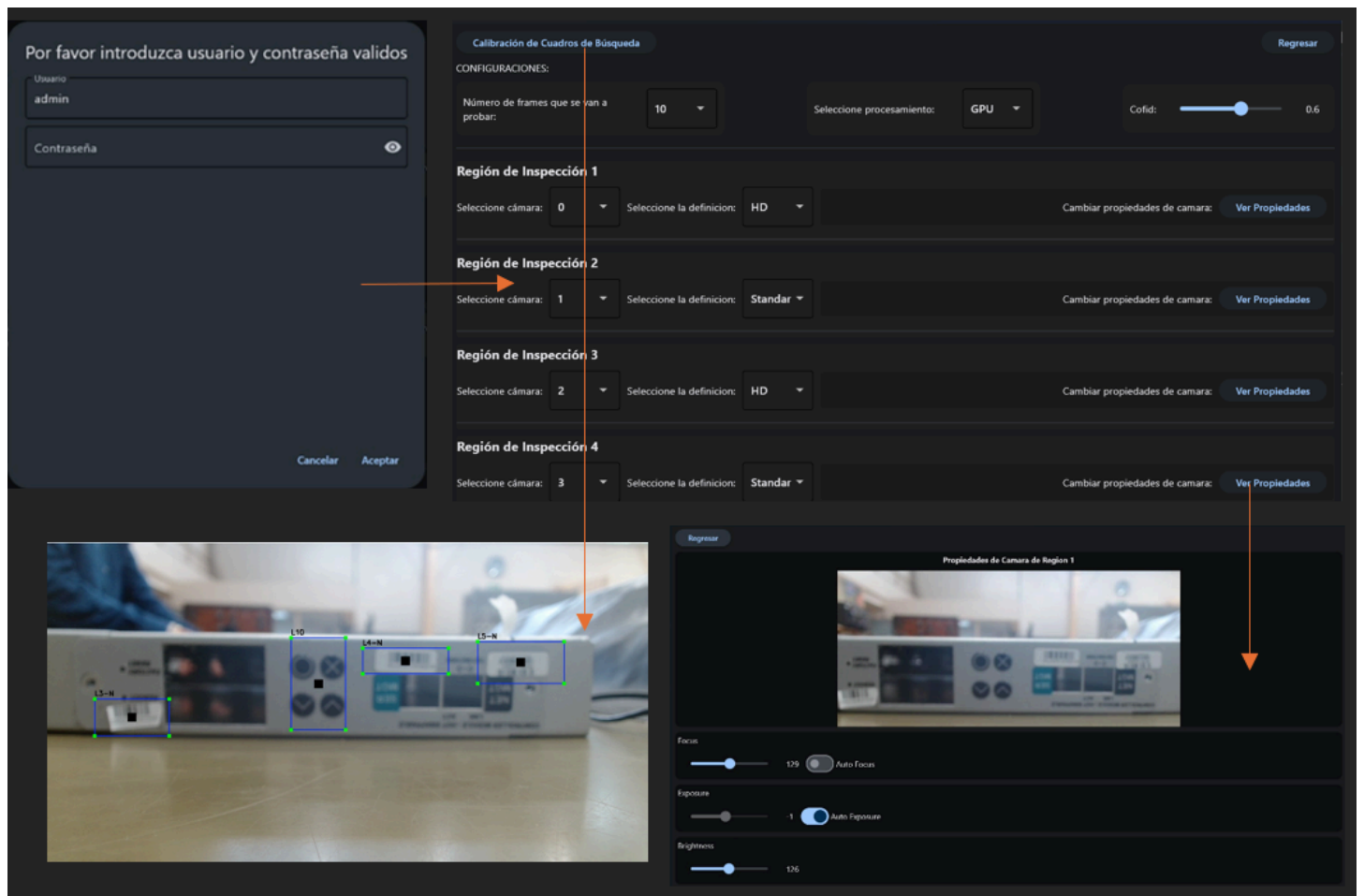
It also includes **settings** to change or select cameras, change resolutions, search boxes, camera properties, among other configurations for the proper functioning of the system. To access the settings, a username and password are required so that only authorized and capable personnel can manipulate them.
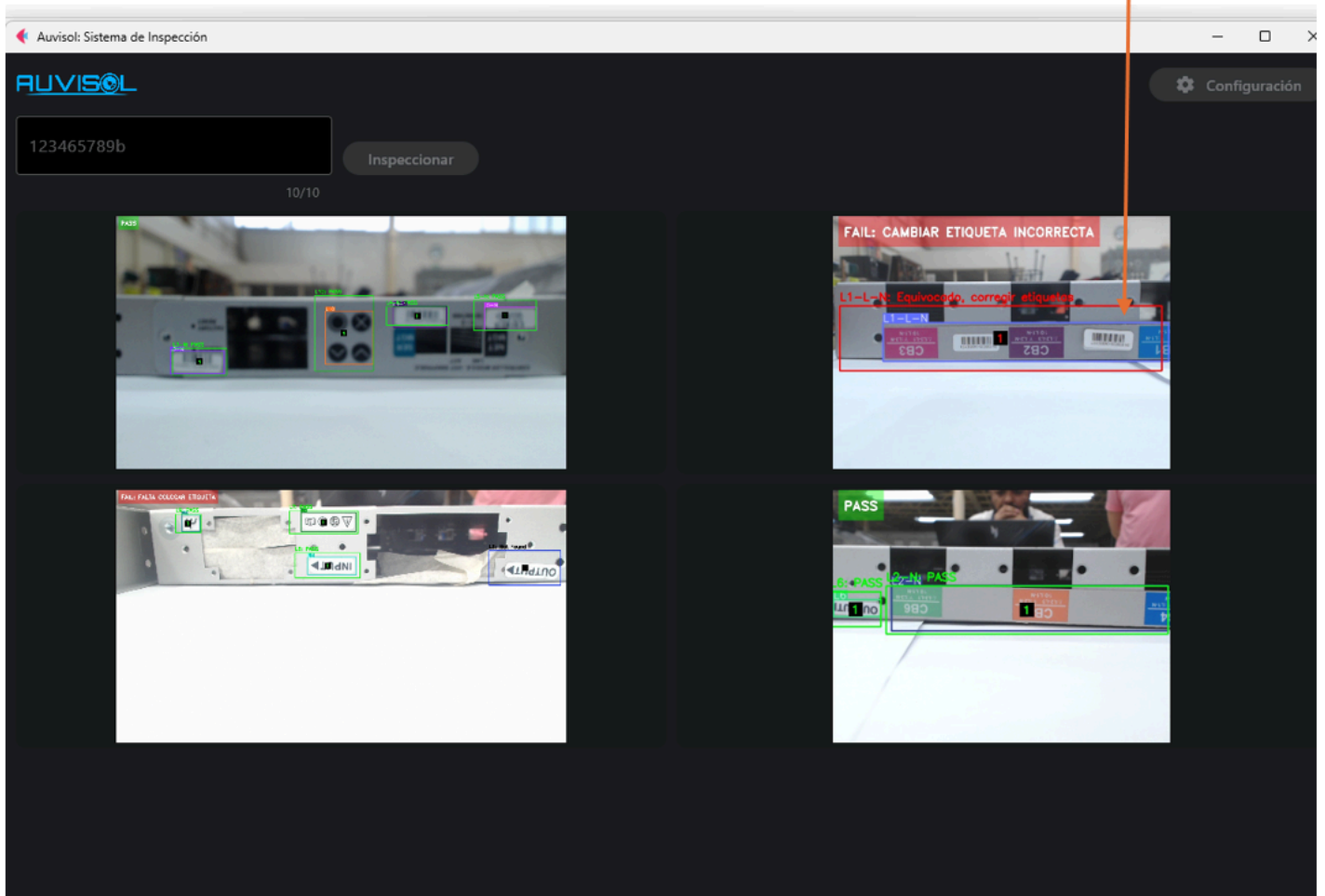
Upon completion of each inspection, a log file is generated for **seamless integration** with the **MES.**
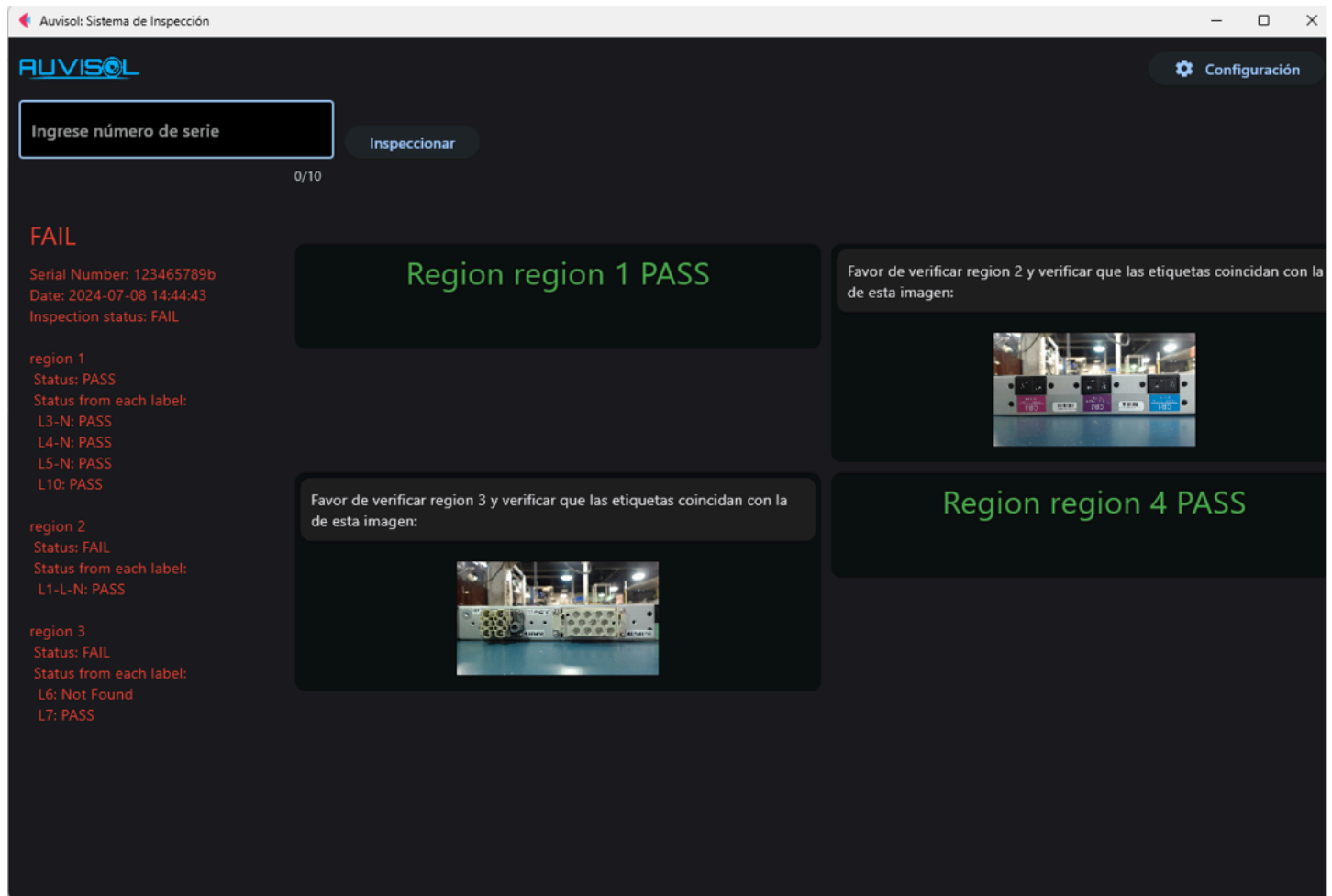

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```xml
<TestSummary>
  <ApplicationInformation>
    <item key="Name" value="Inspection System"/>
    <item key="Version" value="1.0"/>
  </ApplicationInformation>
  <ScriptExecutionResults>
    <item key="TestOutcome" value="FAIL"/>
    <item key="TestDate" value="2024-07-08"/>
    <item key="TestTime" value="14:42:09.847"/>
    <Region id="region 1">
      <item key="Status" value="FAIL"/>
      <item key="L3-N" value="FAIL"/>
      <item key="L4-N" value="PASS"/>
      <item key="L5-N" value="PASS"/>
      <item key="L10" value="PASS"/>
    </Region>
    <Region id="region 2">
      <item key="Status" value="PASS"/>
      <item key="L1-L-N" value="PASS"/>
    </Region>
    <Region id="region 3">
      <item key="Status" value="PASS"/>
      <item key="L6" value="PASS"/>
      <item key="L7" value="PASS"/>
      <item key="L8" value="PASS"/>
      <item key="L9" value="PASS"/>
    </Region>
    <Region id="region 4">
      <item key="Status" value="PASS"/>
      <item key="L2-N" value="PASS"/>
      <item key="L6" value="PASS"/>
    </Region>
  </ScriptExecutionResults>
</TestSummary>
```

Running app:

Its shows that one label is installed incorrectly / same label repeated

Adaptability and AI Training

Due to the use of Artificial Intelligence, **this system can be adapted to detect other types of objects**, it is not limited to those shown in this application.

The Artificial Intelligence can be trained to detect other pieces or even defects.

Conclusion

This AI-powered inspection system offers a **robust solution for automated object inspection**, ensuring high precision and adaptability. Its user-friendly interface and secure settings make it an efficient tool for production environments, capable of evolving with future inspection needs.

AUVISOL

davidolivasg@hotmail.com

ing_jose_villarreal@hotmail.com

614-112-8643

614-256-9473

About the Company

We specialize in AI-driven solutions for object detection and inspection, offering precision, flexibility, and efficiency. Our mission is to streamline processes and set new standards in inspection technology, driving the future of smart manufacturing.