is oriented. This makes it possible, for the first time to perform trimming and sampling on a vertical coil.

## ROBOTIC ARM & VISION SYSTEM

To support the interaction between the coil and the Ring Processing Turret, we have designed a ring transfer and separation system, as illustrated in Fig. 4, which pulls the forwardmost rings from the exposed end of the C-hook towards the turret while also spreading them to create additional separation. An advanced vision system, as illustrated in Fig. 5 takes a snap-shot of the wire loops and makes a selection based on an advanced image analysis algorithm of which one of these wires is to be picked.

Once the selection is made, a robotic arm moves to collect the selected wire and to subsequent place the loop segment into the extended receiving guide of the ring processing turret. After the ring processing turret has performed its trimming and sampling sequence, the robotic arm moves into position to collect and discharge the trimmed rings. If a sample is required, it is collected in a separate sample guide which extends and exposes the sample to the robotic arm, which then collects the sample and places it in the sample tray, as illustrated in Fig. 6.

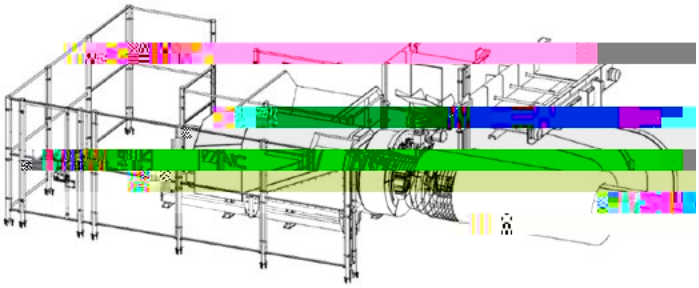

**Fig.4** - Illustration of rings being transferred from the C-hook toward the turret.

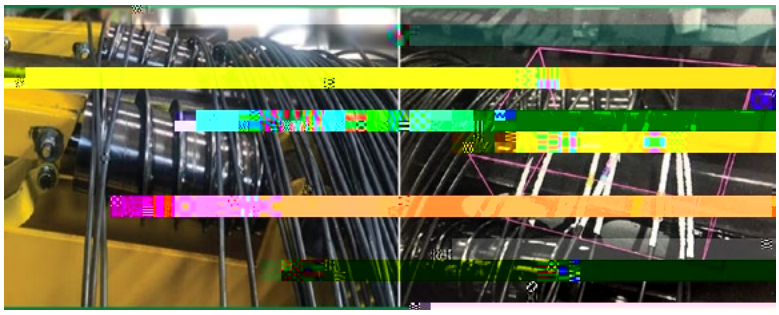

**Fig.5** - Photo of separated rings & the vision system interpretation of the same.

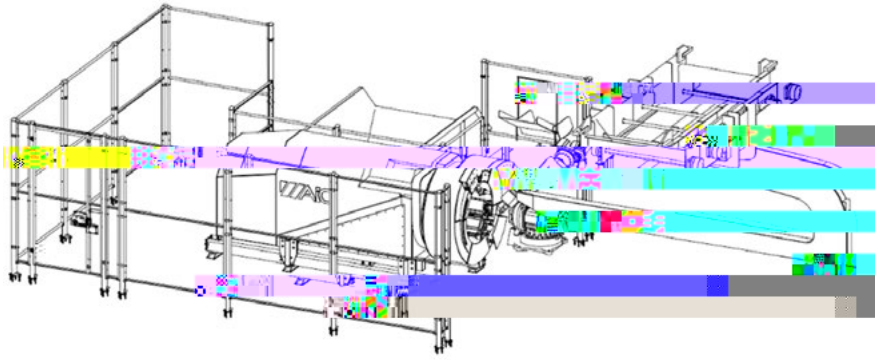

**Fig.6** - Illustration of the robotic arm collecting a sample.