MOSAIC IRIS

Intelligent Recognition & Inspection System

Try It Yourself: A Visitor's Guide to MOSAIC IRIS

99Bridges Inc. · MOSAIC Edge-R · 99bridges.com

Welcome

You've already seen how a visitor checks in an item and returns it — through a QR sign, a bin's own code, or a fully automatic RFID drop. MOSAIC IRIS is what makes that last part possible: the recognition and inspection intelligence running quietly inside the return bin the instant an item lands. This is where you see it happen.

What Is MOSAIC IRIS?

MOSAIC IRIS — short for Intelligent Recognition & Inspection System — is 99Bridges' recognition and inspection module for MOSAIC Edge-R. Think of it as the "eyes" of a smart return bin: when a reusable item is dropped in for return, IRIS identifies exactly what it is and checks its condition, in real time, without a person checking each item by hand.

IRIS works in two stages: Recognition — confirming what the item is, down to its exact profile — and Inspection — assessing its condition so it can be routed to reuse, cleaning, or retirement. Recognition is what you'll see live today; Inspection is under active development.

Why Is MOSAIC IRIS Needed?

Without automated recognition, someone would have to manually verify every single item that comes back — what it is, whether it's actually the right item, and whether it's still in good enough shape to reuse. That doesn't scale past a handful of locations. For a reuse network to work at real volume, a return point needs to know instantly and accurately what just came back, with no staff required at the bin and no delay for the customer. MOSAIC IRIS is what turns an unattended return bin from a simple drop box into a smart one.

How Does It Work?

Every reusable item gets a unique code — QR or RFID — tied to its exact profile (brand, type, style) the moment it's registered in MOSAIC.

- When an item is returned, that code is read first, narrowing the search from an entire catalogue down to exactly one known profile before anything else happens.
- Three cameras inside an enclosed imaging chamber then capture the item from different angles, and IRIS cross-checks what it sees — size, color, visual markers — against that one profile.
- This catches the one case a code alone can't: someone scans a valid code but drops in the wrong item.
- IRIS reports a confidence score for every match, so low-confidence returns can be flagged for a quick human review instead of trusted blindly.

The Demo — Three Parts

Today's demo covers Recognition live, start to finish, plus a guided look at the two tools that keep IRIS accurate and growing over time: Calibrate and the Training Module.

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PART 1

Recognize a Return

Watch IRIS identify a real item, live, end to end.

1. **Scan the item —** A 99Bridges team member scans the QR code on a cup or container with a handheld QR reader.
2. **See its profile appear —** The item's profile — what it is, its brand, its style — appears on the IRIS Dashboard screen right in front of you.
3. **Drop it in —** The item goes into the imaging cradle.
4. **Click Scan —** A team member taps Scan on the IRIS Dashboard.
5. **See the result —** IRIS shows its match, along with a confidence score for how sure it is.

> ***Demo note:*** *in a real deployment, this all happens automatically — the QR or RFID reader is built into the return bin itself, and scanning a valid code is what triggers the cradle to open. Once the item is dropped in, the cradle closes on its own and the cameras capture images without anyone pressing a button. The manual Scan button you see today exists only for this demo, so we can walk through each step at a comfortable pace.*

PART 2

Calibrate IRIS

A guided talk-through, with one function shown live.

Calibrate is the set of tools that keep IRIS accurate over time — things like camera calibration, region masking, and reference image capture. We'll talk through what each of these does, and demonstrate one live: resetting the reference image IRIS compares new scans against.

PART 3

Training Module

A guided talk-through, with one function shown live.

Every reusable item needs a set of reference images before IRIS can recognize it — that's what the Training Module is for. We'll talk through its other functions, and show one live: adding a new image set for an item.

Want the deeper walkthrough? This booth demo shows IRIS at a glance. For an in-depth session — including live profile creation and real-time recognition — schedule time with our team at www.99bridges.com/packexpo2026.

This guide covers our MOSAIC IRIS demo. Ask a 99Bridges team member about our other PACK EXPO demos, including Packaging Checkout and Packaging Return.

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