

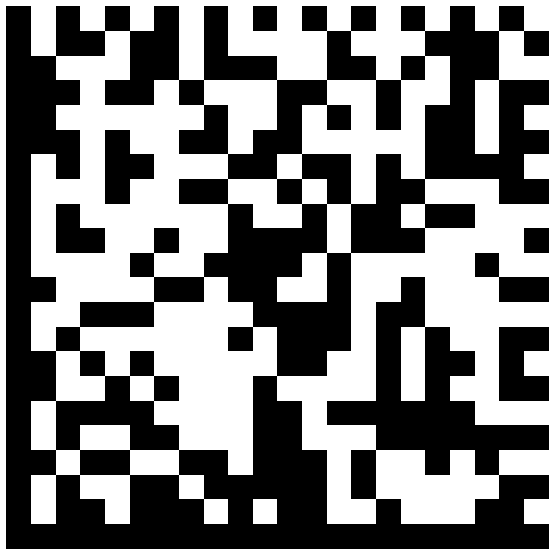
Data Matrix, Aztec, and MaxiCode

Prepared by Gabriel Baziramwabo, Founder and CEO of Benax Technologies

Data Matrix, Aztec, and MaxiCode are versatile and efficient coding systems used across industries. They must not be ignored.

Let's discuss them.

1. Data Matrix Code



- **Usage:** ECC 200 (Error Correction Code 200) is the most advanced and widely used variant of Data Matrix codes. It's based on **Reed-Solomon (RS) codes**.

Reed-Solomon (RS) codes are a class of error-correcting codes that help detect and correct errors in digital data. They are widely used in QR codes, Data Matrix codes, CDs/DVDs, satellite communications, and deep-space transmissions.

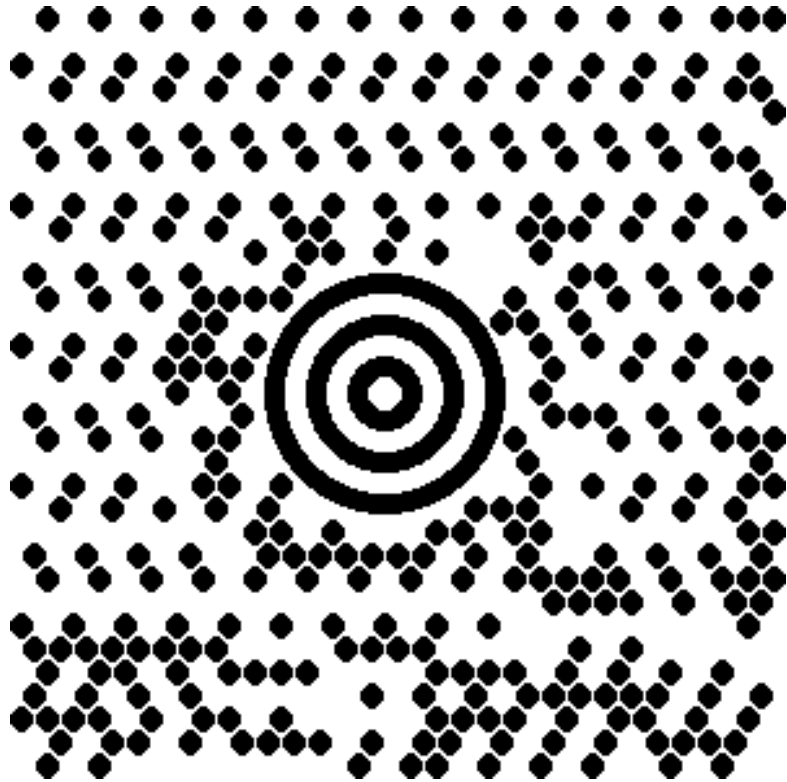
- **Structure:** Highly reliable and robust against damage.
- **Example:** Used on microchips, surgical tools, pharmaceutical packaging and in aerospace and automotive industries for parts tracking.

2. Aztec Code



- **Usage:** Widely adopted in transportation and ticketing.
- **Structure:** Central bullseye enables fast scanning from any angle.
- **Example:** Found on boarding passes and train tickets.

3. MaxiCode



- **Usage:** Used in logistics to encode delivery and tracking information.
- **Structure:** Can store up to 93 characters of data.
- **Example:** Found on UPS shipping labels.

Summary



Barcode: Guard Bars; far left, middle, far right



PDF417: Start & Stop Patterns



QR-code: Finder Patterns



Data Matrix: Finder Pattern (**L** shape)



AZTEC: Finder Pattern (**Square** Bullseye)



AZTEC: Finder Pattern (**Circular** Bullseye)

Why AI Engineers Must Master Code Generation & Decoding

To ensure AI systems can extract hidden data from barcodes, QR codes, and other encoded formats that we've been discussing. This is essential for data mining, automation, computer vision, cybersecurity, and industries like retail and IoT.

An unstoppable AI model must read and decode everything, like a miner uncovering hidden treasures.