

Mr Bubbles — M220 Printing Integration Addendum (for Ronan)

Target: print 50x30 mm QR labels on order acceptance, 1 label per bag, with reprint support and scan chain-of-custody.

A) Flow & APIs

- 1) POST /driver/order/{id}/accept {bag_count} → returns array of N label payloads and a printable artifact (PNG/PDF).
- 2) Client presents print dialog; prints via *Bluetooth SDK* (native) or shares PNG/PDF to the printer app.
- 3) POST /scan/intake and /scan/deliver endpoints update states on scan.
- 4) GET /order/{id}/labels supports reprint with audit log.

B) Label Content

- QR payload: `mbx://bag?v=1&oid={orderId}&bid={i}&bc={N}&cid={customerId}&ts={iso}&sig={hmac}`
- Text: Brand, OrderId, Bag i of N, Customer short name, Address line, Service, Date/Time.
- Typography: 10–11pt, bold for brand/order.
- Density: medium; ensure QR contrast is high.

C) Implementation Options

Option 1 — Native SDK (recommended). Use the printer vendor's iOS/Android SDK to send a bitmap directly. Steps: • Convert label layout to monochrome bitmap (dither/threshold). • Call SDK `printBitmap` with width matching label DPI.

Option 2 — Share PNG/PDF. Backend generates a 50x30 mm PNG/PDF. Client opens share sheet → choose printer app. Simple and robust for a PWA/web flow.

D) Client-Side Tasks

- Driver Settings screen: select printer, test print, set label size.
- Accept modal: number of bags + print button + reprint last labels.
- Offline cache: queue prints when signal is weak; re-send on reconnect.
- Log printed label IDs with timestamps for audit.

E) Edge Cases

- Bag count changed → revoke old labels and generate new series (Bag X of M).
- Printer disconnected mid-job → retry prompt and reconnect flow.
- Multiple drivers picking up same order prohibited by lock token.