



**RAGHAVENDRA
AUTOMATION
PRIVATE LIMITED**



TRACK & TRACE SYSTEM FOR LPG CYLINDERS



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Who we are?

Raghavendra Automation Pvt. Ltd. (RAPL) is a leading engineering solutions provider with over 38 years of specialized experience in the LPG sector.

As an ISO 9001:2015 certified company, RAPL has built a strong reputation for delivering high-quality turnkey solutions tailored to India's foremost LPG bottling operations.



Who we help?

- Major Oil Marketing Companies (OMCs): Indian Oil Corporation (IOCL), Bharat Petroleum (BPCL), Hindustan Petroleum (HPCL).
- LPG Bottling Plant Operators.

Our Clients



What We Do For Them?

- Successfully implemented comprehensive automation systems
- Ensured regulatory compliance across multiple LPG bottling plants
- Improved operational efficiency through advanced tracking and monitoring solutions





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Introducing Our Latest Innovation

The Track & Trace System

We proudly introduce our innovative Track & Trace System, designed to enhance safety, efficiency, and transparency in LPG cylinder operations through modern automation and real-time data.



System Overview

What Our System can do

- Zero human error in cylinder identification.
- 360° high-speed QR code scanning.
- Real-time data communication to central servers.
- Plug-and-play integration with existing setups.
- Compliance with Gas Cylinder Rules (GCR 2025).





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How It Works

Each LPG cylinder receives a durable QR tag affixed to its designated inner stayplate.



Flameproof QR readers at designated Touch Points capture data at each operational stage.



The system ensures safe, efficient operations compliant with Zone 1 hazardous area standards.



Captured data is transmitted in real-time to a centralized server.



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Key System Components



QR Code Tagging Unit:
Durable stainless-steel tags
using clinching mechanism.



TouchPoint QR Readers:
Flameproof enclosures, 360°
scanning with industrial-
grade cameras.



Illumination System: PESO-
approved LED lighting for
clear imaging.



**Server Communication
Module:** Real-time data sync
with local buffering
capabilities.

AI OCR Module – Existing Data Mapping Our advanced AI-powered OCR module accurately reads engraved, punched, or stenciled data on LPG cylinder stayplates.

Capabilities include:

1. Curved surface text recognition
2. Handling punched, engraved, or embossed data
3. Logic-based validation
4. AI retraining support for unique fonts



- From bottling plant to customer
- From customer to bottling plant

All Scanning instance will communicate with the cloud based SW solution

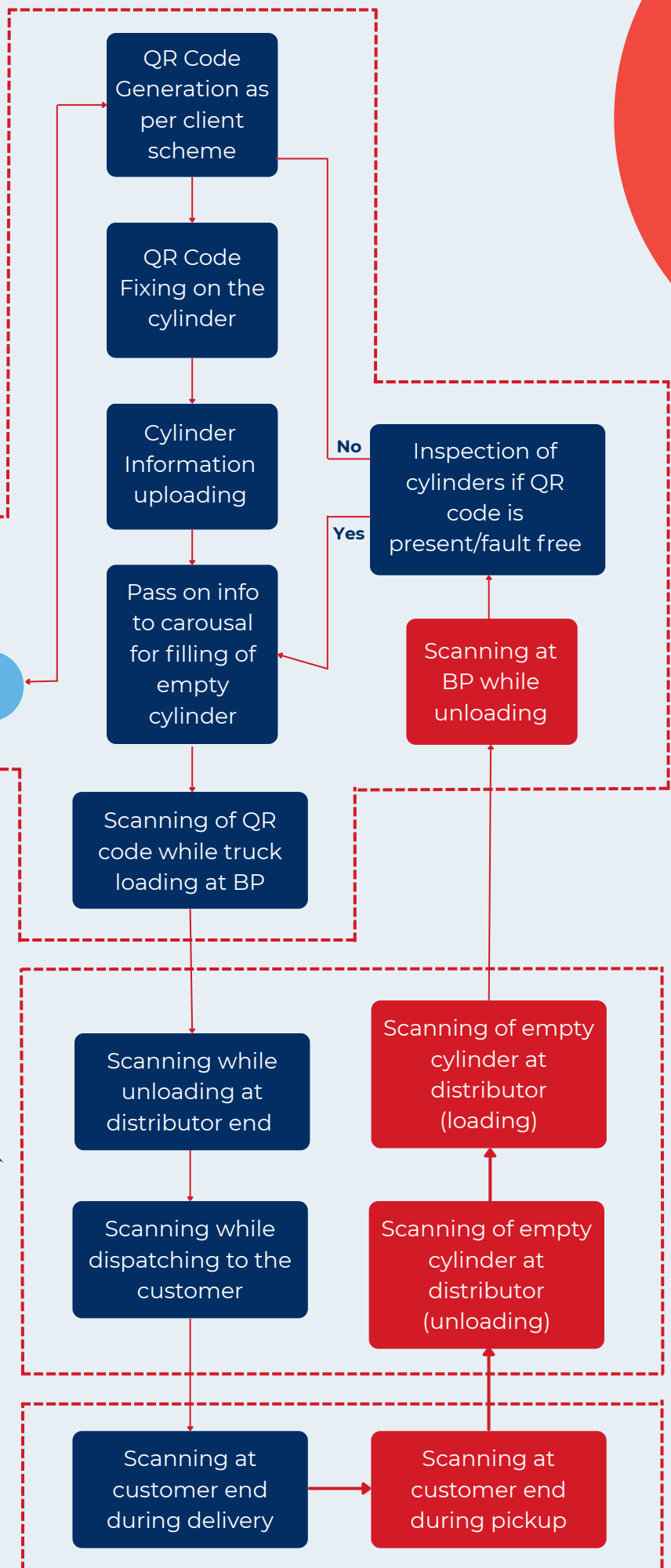
At Bottling Plant



SAP/SDMA-CRM

At Distributor end

At Customer end





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Operational & Regulatory Benefits

- Full Traceability: Complete tracking from cylinder entry to dispatch
- Regulatory Readiness: Compliance with Gas Cylinder Rules 2025 and latest PESO guidelines
- Enhanced Safety: Zone 1 hazardous area certification for all electrical components
- Improved Efficiency: Automated scanning reduces turnaround times and enhances productivity
- Analytics & Control: Exception reporting, cycle-time analysis, and fault alerts
- Integration Ready: Easy integration into existing ERP or PLC systems





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