

# HVAC PAD/RAD AIRCONDITION INDUSTRY AI ERP TICKETING OPERATING SYSTEM

This document defines a complete AI-driven ERP Ticketing Operating System for HVAC, PAD/RAD Airconditioning Industry covering Engineering, Duct Manufacturing, Procurement, Fabrication, Installation, Commissioning, AMC Service, Breakdown Maintenance, Billing, and AI Automation.

## 1. HVAC Project Execution Structure

ID	Order Item	Department	Process	Activity	Progress %
2001	HVAC SYSTEM	Sales	ORDER	Customer Order	5
2002	HVAC SYSTEM	Design	ENGINEERING	Heat Load Calculation	10
2003	HVAC SYSTEM	Design	ENGINEERING	Duct Layout Approval	15
2004	HVAC SYSTEM	Procurement	PURCHASE	Equipment Procurement	20
2005	DUCTING	Manufacturing	FABRICATION	GI Sheet Cutting	25
2006	DUCTING	Manufacturing	FABRICATION	Duct Fabrication	30
2007	DUCTING	Manufacturing	FABRICATION	Flange & Insulation	35
2008	HVAC SYSTEM	Logistics	DISPATCH	Material Dispatch	40
2009	HVAC SYSTEM	Site Execution	INSTALLATION	Duct Installation	50
2010	HVAC SYSTEM	Site Execution	INSTALLATION	Copper Piping	55
2011	HVAC SYSTEM	Electrical	INSTALLATION	Control Wiring	60
2012	HVAC SYSTEM	Testing	TESTING	Pressure Testing	70
2013	HVAC SYSTEM	Testing	TESTING	Air Balancing	75
2014	HVAC SYSTEM	Commissioning	COMMISSIONING	Trial Run	85
2015	HVAC SYSTEM	Commissioning	COMMISSIONING	Final Handover	90
2016	AMC SERVICE	Service	AMC	Preventive Maintenance	95
2017	BREAKDOWN	Service	SERVICE	Complaint Resolution	100

## 2. AI ERP Ticketing Operating System

### Single Screen Ticketing ERP Concept

Every activity in HVAC ERP becomes a ticket.

#### Examples:

- Customer Inquiry Ticket
- Site Survey Ticket
- Heat Load Calculation Ticket
- Duct Drawing Approval Ticket
- Procurement Ticket
- Duct Fabrication Ticket
- Material Dispatch Ticket
- Installation Ticket
- Testing & Commissioning Ticket
- AMC Preventive Service Ticket
- Breakdown Complaint Ticket
- Gas Charging Ticket
- Filter Cleaning Ticket

- Warranty Claim Ticket
- Vendor Payment Ticket
- Technician Attendance Ticket

### 3. How AI ERP Ticketing OS Will Work

#### STEP 1 – Customer Communication

Customer sends Email / WhatsApp / Call / Website Inquiry.

#### STEP 2 – AI Reads Communication

AI extracts customer name, project type, tonnage, location, urgency, equipment details, and delivery schedule.

#### STEP 3 – AI Auto Generates Tickets

AI automatically creates:

- Sales Ticket
- Estimation Ticket
- Design Ticket
- Site Visit Ticket
- Procurement Ticket
- Fabrication Ticket
- Installation Ticket
- Service Ticket

#### STEP 4 – Department Allocation

AI assigns tickets to departments based on project stage.

#### STEP 5 – Live Tracking

Every technician, vendor, engineer, and manager updates the same ticket timeline.

#### STEP 6 – AI Escalation

If delays occur, AI automatically escalates to managers.

#### STEP 7 – AI Billing & Payment

AI generates RA bills, invoices, AMC renewals, and payment reminders automatically.

### 4. HVAC ERP Modules

Module	Purpose
CRM	Lead & customer management
Design	Heat load & duct design
Procurement	Vendor & purchase management
Manufacturing	Duct fabrication tracking
Inventory	Material stock management
Projects	Installation & execution tracking
Service	AMC & breakdown maintenance
HR	Technician attendance & payroll
Finance	Billing & payment tracking
AI Engine	Automation & ticket intelligence

### 5. AI Automation Features

- AI email-to-ticket conversion
- WhatsApp complaint auto registration

- AI technician scheduling
- Geo-location technician tracking
- AI preventive maintenance reminders
- AI spare parts recommendation
- AI project delay prediction
- AI vendor follow-up system
- AI energy efficiency analytics
- AI service report generation
- AI quotation generation
- AI AMC renewal reminders

## 6. Recommended Database Structure

Table	Purpose
TICKETS	Central ticket engine
PROJECTS	Project master
CUSTOMERS	Customer details
DUCTFABRICATION	Duct production tracking
SERVICECALLS	Breakdown complaints
AMCMASTER	AMC contracts
TECHNICIANS	Technician details
ATTENDANCE	Attendance & GPS tracking
PAYMENTS	Invoices & collections
MATERIALS	Inventory & stock

## 7. Final HVAC AI ERP Architecture

### Customer Side:

Inquiry → Site Survey → Quotation → Order → Installation → AMC → Breakdown Service

### Internal ERP Side:

Sales → Design → Procurement → Duct Manufacturing → Installation → Testing → Service → Finance

### AI Operating System:

AI Emails → AI Tickets → AI Scheduling → AI Escalation → AI Billing → AI Analytics