



Software Complete Guide

Android-first analytics, attribution, engagement, experience builder, and AI growth operating system

Purpose

This handbook explains Atryvo functionality in a book-style index format for clients, internal teams, investors, implementation partners, and support agents.

Document	Details
Product	Atryvo
Audience	Client product teams, marketers, analytics teams, implementation engineers, support agents, and platform admins
Version	Enterprise MVP handbook
Primary URL	https://atryvo.com
Primary value	One Android-first platform for analytics, attribution, engagement, remote UI experiences, and growth intelligence

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Book Index

Chapter	What The Reader Will Learn
1. Executive Overview	What Atryvo is, who buys it, and why it exists.
2. Product Terminology	Definitions for workspace, app, API key, anonymous ID, attribution, segment, SDK health, and more.
3. Platform Roles And Login Model	Admin, agent, and client portal responsibilities and access paths.
4. Client Portal Workflow	How a client creates apps, manages SDK keys, and reads analytics.
5. Android SDK	Integration API, privacy guardrails, auto-tracking, queueing, and AAR/Maven usage.
6. Analytics And Realtime Dashboards	How live users, sessions, installs, revenue, events, and quoted fares are calculated.
7. Attribution And Smart Links	Install referrer, smart links, deferred deep links, partner readiness, and evidence timeline.
8. Engagement	Push, in-app messaging, journeys, orchestration, experiments, and campaign operations.
9. Experience Builder	No-code Android UI experiences, targeting, templates, analytics, and rendering safety.
10. Customer Behavior	Profiles, identity stitching, user search, event timelines, and customer 360.
11. Uninstall Tracking	FCM token capture, validation jobs, probe reports, and limitations.
12. Revenue, Funnels, Cohorts, LTV	Revenue logic, latest quoted fare, funnels, retention, and LTV views.
13. AI Growth Intelligence	Current deterministic AI-style insights and future LLM integration.
14. Data Platform	PostgreSQL, Redpanda/Kafka, ClickHouse, exports, webhooks, and observability.
15. Privacy And Security	Consent, sensitive data filtering, RBAC, MFA/SSO readiness, and secret management.
16. Admin And Agent Management	Client provisioning, workspace deactivation, user roles, and audit logs.
17. Deployment And Operations	GitHub, VPS, Docker, Caddy, secret manager, health checks, and runbook.
18. Implementation Checklist	Client onboarding steps before and after SDK launch.
19. Troubleshooting	Common issues and direct fixes.
20. Roadmap	Enterprise readiness items and future hardening areas.

Navigation note

This visible book index is intentionally included so the handbook is readable immediately in Word, PDF, browser preview, and shared copies.

1. Executive Overview

What Atryvo Is

Atryvo is an Android-first mobile growth operating system. It combines SDK-based analytics, install attribution, smart links, deep links, screen tracking, customer behavior, engagement campaigns, in-app messaging, Experience Builder, uninstall tracking, and operational dashboards.

The product is designed for companies that do not want to buy and integrate separate tools for attribution, analytics, engagement, product adoption, and raw data ownership.

Why Companies Buy It

A single SDK collects privacy-safe behavior and sends it to one backend.

Client teams can see app installs, users, sessions, screens, events, revenue, deep links, campaigns, SDK health, uninstall readiness, and user behavior from one portal.

Growth teams can create audiences, journeys, push campaigns, in-app messages, and Android-native remote UI experiences without releasing a new app version.

Engineering teams get a safer integration surface with consent controls, retries, queueing, SDK diagnostics, and Maven/AAR delivery options.

2. Product Terminology

Term	Meaning
Workspace	A company account or business space inside Atryvo. It contains apps, members, API keys, analytics, campaigns, and settings.
App	A registered Android application with package name, app ID, API keys, and event data.
API key	The credential used by the SDK to send events. Keys are stored hashed in the backend and shown only with prefixes in the portal.
Anonymous ID	A privacy-safe device/app identity used before a customer user ID is set.
Customer User ID	The app developer's known user identifier, such as a logged-in customer ID. It should not be a password, OTP, card number, or sensitive value.
Install ID	A persistent SDK-generated ID used to deduplicate installs and stitch anonymous-to-known behavior.
Session	A period of active app usage from foreground/open until background/end.
Event	A tracked action such as search, purchase, screen view, payment failure, app open, or custom business event.
Attribution	The process of deciding which source, campaign, click, referrer, or smart link caused an install or conversion.
Deep link	A link that opens a specific screen inside the app.
Deferred deep link	A deep link decision applied after install, when the user clicked before the app was installed.
Experience	A no-code Android-native UI block delivered remotely through the SDK, such as banner, bottom sheet, coupon, NPS, or recommendation card.
Segment	A dynamic audience based on behavior, properties, attribution, scores, or lifecycle state.
Push token	FCM token used for push delivery and uninstall detection. It is collected only when configured and consented.
SDK Health	Operational view of SDK version, app version, key status, event freshness, queue, referrer, deep link, and push token readiness.

3. Platform Roles And Login Model

Role	Purpose	Typical Access
Admin	Atryvo owner/super admin managing platform clients, agents, users, billing, workspaces, apps, and audits.	/portal/admin/login
Agent	Support or implementation team member who manages only assigned or created client workspaces.	/portal/agent/login
Client	Company user who manages their own assigned workspace, apps, API keys, dashboards, and campaigns.	/portal/client/login

- Client users should normally land directly in their assigned workspace/apps flow.
- Workspace creation belongs to Admin and selected Agent workflows, not ordinary Client users.
- Inactive workspace state should block action until reactivated by Admin.

4. Client Portal Workflow

1. Client logs in through the Client portal.
2. Client sees assigned workspace and enrolled apps.
3. Client adds an Android app with app name and package name.
4. Client generates or views API key prefixes in API Keys.
5. Engineering integrates SDK using Maven/AAR and initializes with app ID, API key, and base URL.
6. Portal shows live ingestion, SDK health, events, screens, sessions, attribution, revenue, and campaign data.

Credibility rule

Dashboard metrics must be traceable. Counts should be deduplicated by install ID, anonymous ID, customer user ID, and session ID. Quoted fare should not be taken from generic click/back events.

5. Android SDK

SDK Area	Functionality
Initialization	Atryvo.init with appld, apiKey, baseUrl, environment, debug logs, lifecycle/screen/click/crash flags, batch and queue settings.
Consent	setUserConsent, opt-out, Advertising ID only after consent, no uploads when consent blocks it.
Identity	Persistent anonymous/install/session IDs, customer user ID, user property support, identity stitching.
Events	trackEvent, trackScreen, trackSearch, trackAction, revenue/purchase events, deep link handling.
Queue	Local event storage, retry, flush, WorkManager network constraints, max queue limits.
Device info	Package, app version, SDK version, OS, device model, language, country, timezone, network, screen size; no sensitive fields.
Experience Builder	Remote UI sync, matching, cache, rendering, impression/click/dismiss/conversion tracking.
Push token	FCM token registration through SDK or explicit Atryvo.setPushToken(token, "fcm").

SDK privacy guardrail

The SDK must never read OTP, password, card, CVV, UPI PIN, SMS, contacts, call logs, precise location, or EditText values automatically.

Minimal Android Integration

```
Atryvo.init(context = applicationContext, config = AtryvoConfig(appld = "APP_ID", apiKey = "API_KEY", baseUrl = "https://atryvo.com"))
```

```
Atryvo.setUserConsent(true)
```

```
Atryvo.trackEvent("purchase", mapOf("amount" to 999, "currency" to "INR"))
```

6. Analytics And Realtime Dashboards

Metric	Definition
Live users now	Unique active identities in the selected live window, stitched using customer ID, install ID, anonymous ID, and session ID.
Live sessions	Distinct active session IDs in the live window.
Total installs	Unique install records after dedupe.
DAU/MAU	Unique active identities in the last day/month windows.
Sessions	Unique tracked SDK sessions.
Average session duration	Average duration from session records or session end event fallback.
Revenue	Confirmed purchase/payment revenue only, not quoted fare.
Latest quoted fare	Trusted fare/search/listing quote events only, not click/back events.

- The Live Stream page shows latest events and user/device context.
- The SDK Health page shows integration status and missing setup.
- Screens and paths show activity, screen duration, transitions, and drop-off signals.

7. Attribution, Smart Links, And Deferred Deep Links

Feature	What It Does
Install referrer	Reads Google Play Install Referrer safely and sends first-open attribution signals.
Smart links	Creates campaign links, redirects, fallback routes, QR links, and smart banners.
Deferred deep links	Resolves post-install destination from click/referrer/matching evidence.
Evidence timeline	Shows click time, install time, referrer, campaign, source, IP/user-agent signals, confidence, fraud score, and final decision.
Partner framework	Foundation for Google Ads, Meta, TikTok, OEM/preload, and postback integrations.
Fraud signals	Click spam, injection timing, duplicate installs, device farm signals, and confidence scoring foundation.

8. Engagement: Push, In-App, Journeys

Capability	Details
Push campaigns	FCM provider abstraction, encrypted tokens, retries, throttling, quiet hours, frequency caps, queueing, dry run, and delivery analytics.
In-app messaging	Modal, banner, fullscreen, bottom sheet, coach mark, templates, triggers, targeting, variants, and conversion goals.
Journeys	Visual journey canvas, trigger/condition/wait/split/experiment/webhook/push/in-app nodes, approvals, versioning, simulation, and node analytics.
Cross-channel orchestration	Push to in-app to email/webhook/WhatsApp/SMS-ready fallback logic.
AI engagement scoring	Fatigue, open prediction, conversion prediction, and send-time recommendations using deterministic scoring.

9. Experience Builder

Experience Type	Example Use Case
Banner	Travel fare drop alert on flight search results.
Bottom sheet	Cart recovery coupon or booking reminder.
Tooltip / coach mark	KYC reminder on wallet screen.
Recommendation card	Repeat order, fare drop, product recommendation, or payment reminder.
Survey / NPS	Post-order rating and feedback collection.
Onboarding checklist	Product adoption flow and guided setup.
Embedded native card	Remote-controlled Android UI block inside app layout.

7. Create or choose a template in the dashboard.
8. Configure layout: title, message, image, CTA, colors, placement, animation, dismiss behavior, dark mode.
9. Configure targeting and trigger rules: screen, event history, properties, segment, app version, country, revenue/LTV, AI scores.
10. Set frequency caps, variants, schedule, approval, and publish state.
11. SDK syncs active experiences, matches locally, renders safely, and tracks impression/click/dismiss/conversion.

10. Customer Behavior And User Profiles

- Profiles combine anonymous and known user activity where identity evidence exists.
- Client teams can search users, inspect events, screens, sessions, revenue, campaign exposure, push token status, and app version.
- Identity resolution should show merge evidence and avoid double-counting the same person across anonymous and logged-in events.
- Customer 360 APIs are intended for support, growth, personalization, and export workflows.

11. Uninstall Tracking

Step	Requirement
1	Android app includes Firebase Messaging dependency and FCM configuration.
2	SDK registers push token after consent, or app calls <code>Atryvo.setPushToken(token, "fcm")</code> .
3	Server has <code>FCM_PROJECT_ID</code> and <code>FCM_SERVICE_ACCOUNT_JSON</code> or <code>FCM_SERVER_KEY</code> configured.
4	Atryvo creates validation jobs on a configured interval, default 30 minutes.
5	Invalid/permanent FCM token response records an uninstall signal and optional alert.

Important

Uninstall detection is not instant. Android uninstall is inferred through FCM token invalidation after a validation/probe job.

12. Revenue, Funnels, Cohorts, LTV

- Revenue is confirmed purchase/payment value, not searched fare or quoted fare.
- Refunds, order ID dedupe, currency, validation status, and attribution source support revenue integrity.
- Funnels show step conversion, drop-off, source/device breakdown, and recommendation signals.
- Cohorts and LTV group users by first activity, source, campaign, payer status, and revenue trajectory.

13. AI Growth Intelligence

Current AI truth

Atryvo currently includes deterministic AI-style intelligence, scoring, and ML-ready foundations. External LLM AI is not active unless an OpenAI/Gemini/Claude key is configured.

Area	Current Implementation
Growth Copilot	Explains changes, suggests audiences, recommends fare-drop actions and best send windows.
AI audience	Creates behavior-based audiences such as searched route but did not book.
Churn prediction	Scores users using recent activity, sessions, conversion, and inactivity rules.
Engagement intelligence	Fatigue score, open prediction, conversion prediction, and send-time logic.
ML foundation	Feature store, model registry, training endpoint, prediction storage, and inference API scaffolding.
LLM future	Natural language query, copy generation, journey builder assistant, funnel diagnosis, and client support assistant after API key configuration.

14. Data Platform And Integrations

Layer	Purpose
PostgreSQL	Operational source of truth for users, workspaces, apps, API keys, events, installs, sessions, campaigns, and configs.
Redpanda/Kafka	Realtime event streaming and outbox architecture.
ClickHouse	Analytics-ready high-volume event reporting foundation.
Webhooks	Signed event/postback delivery with retry worker and delivery logs.
Raw exports	CSV export, scheduled export jobs, and S3/GCS/BigQuery/Snowflake connector foundation.
Observability	OpenTelemetry, Prometheus, Grafana, metrics, queue status, and health endpoints.

15. Privacy, Consent, Security

Control	Details
Consent	Tracking and advertising ID collection respect consent state.
Sensitive data filtering	Blocks common sensitive keys and avoids automatic input value collection.
API key security	Keys are stored hashed; prefixes are shown for identification.
Secret management	Production supports GCP Secret Manager/Vault/cloud secret references.
RBAC	Admin, Agent, Client roles plus workspace-level permissions and audit logs.
Compliance	GDPR/CCPA workflows, delete/export/opt-out, retention settings, data residency foundation.
MFA/SSO readiness	MFA, SSO/SAML/OIDC, SCIM, audit export, and policy docs are enterprise readiness areas.

16. Admin, Agent, And Workspace Management

- Admin can manage all clients, users, apps, plans, workspace status, and audit logs.
- Agent should see only assigned or created workspaces.
- Client should see only their own workspace and enrolled apps.
- Admin should see which agent created or owns a workspace and how many clients each agent supports.
- Deactivated workspace should be visibly locked and should block actions until reactivated.

17. Deployment And Operations

12. Push code to GitHub main branch.
13. GitHub Actions builds/tests and deploys to VPS, or operator runs Docker Compose manually.
14. Caddy routes atryvo.com and www.atryvo.com to dashboard on 127.0.0.1:8080.
15. Dashboard proxies /api to backend on 127.0.0.1:3000.
16. Backend uses Postgres, Redpanda, ClickHouse, OpenTelemetry, and optional GCP Secret Manager.

Common production check: `curl https://atryvo.com/api/readyz` should return `ok=true, database=ok, kafkaConfigured=true, clickHouseConfigured=true, otelConfigured=true, secretManagerConfigured=true`.

18. Client Implementation Checklist

- Create or assign client workspace.
- Create Android app with correct package name.
- Generate production API key.
- Integrate SDK via Maven or AAR.
- Set production baseUrl to <https://atryvo.com>.
- Initialize SDK in Application class.
- Set consent when user agrees.
- Set customer user ID after login.
- Track business events: search, booking started, payment started, payment success/failure, purchase.
- Verify events, screens, sessions, SDK health, push token, and uninstall readiness in portal.
- Run fresh install test after resetting test data if exact count validation is required.

19. Troubleshooting Guide

Issue	Likely Cause	Action
No events	Wrong API key, wrong app ID, consent false, baseUrl wrong, network blocked.	Check SDK Health, API key prefix, app ID, baseUrl, logs.
Live user double count	Anonymous and logged-in IDs not stitched or stale historical data.	Verify install ID/customer ID; reset test data for clean validation.
Quoted fare wrong	Non-quote click event sent price/fare.	Use trusted quote event or set is_quote_event=true only on real quote payloads.
Uninstall missing	No FCM token or no server FCM credentials.	Configure Firebase Messaging, register token, configure FCM JSON/server key, run validation.
502 on website	Backend/dashboard container down or Caddy reverse proxy wrong.	Check docker compose ps/logs and Caddyfile proxy to 8080/3000.
Secret manager false	GCP service account, secret payload, env refs, or compose override not loaded.	Verify readyz, mounted JSON, GCP project, secret JSON fields.

20. Roadmap And Enterprise Readiness

Area	Next Enterprise Step
LLM AI	Add OpenAI/Gemini provider for natural-language insights, campaign copy, audience builder, and support assistant.
Certified partner attribution	Google Ads, Meta, TikTok, OEM/preload certification and production postbacks.
SSO/SCIM	Full enterprise login provisioning and automated user lifecycle.
SOC 2 readiness	Evidence collection, access reviews, vendor reviews, incident drills, backup restore tests.
Warehouse sync	Production BigQuery/Snowflake sync with monitoring and replay.
Mobile coverage	Flutter, React Native, KMM, and iOS SDKs.
Advanced ML	Real training pipelines, feature store jobs, model evaluation, drift monitoring.

Appendix A. Suggested Client Sales Positioning

Atryvo can be positioned as one Android-first growth platform for Indian travel, fintech, ecommerce, and food apps. It reduces tool fragmentation by combining analytics, attribution, engagement, deep links, no-code Android experiences, and data ownership in one implementation.

- For product teams: understand customer behavior and app journeys.
- For marketing teams: create audiences, campaigns, push, in-app, and no-code UI experiences.
- For engineering teams: integrate one privacy-safe SDK instead of several vendor SDKs.
- For leadership: control data, reduce vendor cost, and improve growth decision speed.

Appendix B. Safe Event Naming Examples

Event	Use
flight_search	User searched route/date/passenger criteria.
flight_search_results_loaded	Search/listing quote result loaded; safe place for quoted_fare.
booking_started	User started booking flow.
booking_payment_page_reached	User reached payment page; can contain payable quote but not confirmed revenue.
payment_success	Confirmed revenue event.
payment_failed	Payment failure signal for funnel and AI analysis.
purchase	Confirmed purchase/revenue event.
_screen_view	Automatic/manual screen view.

Appendix C. Final Notes

Product truth

Atryvo is strongest when the portal shows explainable, traceable metrics. Avoid vanity counts; every number should map back to deduped installs, sessions, events, users, revenue records, or explicit quote events.