

ENGINEERING PRODUCTS & SERVICES

Ambimat Group of Companies

India

Design and manufacturing under one roof — from concept to box-packaged product.

ESTABLISHED 1982

44+ YEARS

AMBIMAT GROUP

Concept → Box-Packaged

44+ years of solving tomorrow's problems today

Company snapshot & key metrics

1982

ESTABLISHED

200+

EMPLOYEE STRENGTH

240+

PROJECTS EXECUTED

70+

GLOBAL CLIENTS

20+

INDUSTRIES SERVED

8

CORE TECHNOLOGIES

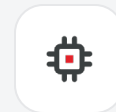
What we do

End-to-end product realization — we take products from concept to production with the full engineering stack under one roof.



Design & Prototyping

Architecture, PCB design & rapid prototypes



Development

Embedded software, firmware & hardware



Fabrication & QA/QC

Multilayer PCB fab with rigorous quality control



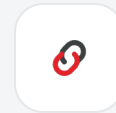
Packaging

Enclosure design & retail-ready packaging



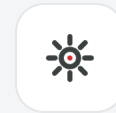
Certifications

FCC, CE, PTCRB & industry compliance



Supply Chain

Global sourcing & inventory management



Manufacturing

Turn-key solutions for mass production



App Development

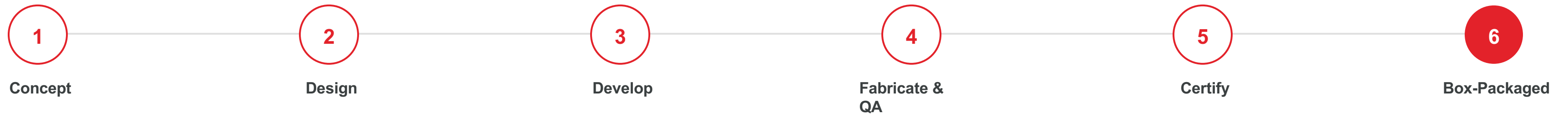
Webserver + mobile apps (AWS, Google IoT)

CORE PHILOSOPHY Concept to box-packaged product

One accountable team — every discipline in-house.

Full-stack expertise

One team owns the entire journey — concept to box-packaged product — with every engineering discipline in-house.



DESIGN & ENGINEERING

- **Design (Product + Architecture)**
System architecture & industrial design
- **Prototyping**
Rapid functional prototypes & iteration
- **Development**
Embedded firmware, hardware & software

BUILD & QUALITY

- **Fabrication & QA/QC**
Multilayer PCB fab with rigorous QC
- **Manufacturing / Turn-Key**
Mass production, box-build & logistics
- **Packaging**
Enclosure design & retail-ready packaging

CONNECT & CERTIFY

- **Webserver + Mobile Apps**
Cloud, APIs & Android / iOS apps
- **Supply Chain**
Global sourcing & inventory management
- **Certifications (FCC, PTCRB)**
Compliance-oriented design & testing

Embedded Software

Production-grade firmware engineered for robust, secure and field-serviceable device performance.



Firmware & RTOS

Real-time, resource-constrained software

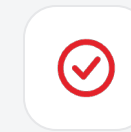
- ✓ Embedded firmware
- ✓ RTOS / bare-metal development
- ✓ Device drivers



Connectivity & Security

Protocols and secure-by-design firmware

- ✓ Communication protocols
- ✓ Secure boot readiness
- ✓ OTA firmware update readiness



Quality & Integration

Validated, observable, production-ready

- ✓ Diagnostics and logging
- ✓ Sensor / device integration
- ✓ Production firmware validation

ENGINEERING STACK

Low-level to high-level — every layer built and validated in-house.

C / C++ / Assembly

8085 → ARM Cortex-M

RTOS

Hardware Design

End-to-end hardware development — from architecture and schematics to certification-ready production files.



Architecture & Schematic

From block diagram to net-list

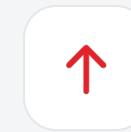
- ✓ Architecture & component selection
- ✓ Schematic design
- ✓ PCB layout



Signal, Power & RF

Integrity-aware, wireless-ready boards

- ✓ Power design
- ✓ RF / antenna considerations
- ✓ 4G / 5G-ready hardware design



Prototype to Production

Manufacturable, certifiable designs

- ✓ Prototyping
- ✓ DFM / DFT readiness
- ✓ Certification-oriented design

DESIGN OUTPUTS

From concept schematics to certification-ready production files.

Schematic → Gerber

4G / 5G-ready

DFM / DFT

Cloud and Mobile

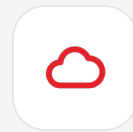
Connecting devices to people and enterprise systems — the bridge into the end-to-end IoT story that follows.



Mobile Apps

Android & iOS for connected devices

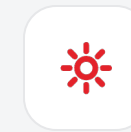
- ✓ Mobile app development
- ✓ Android and iOS
- ✓ Device onboarding
- ✓ BLE / Wi-Fi provisioning



Cloud & Backend

Scalable APIs and device services

- ✓ Cloud APIs
- ✓ Server-side development
- ✓ MQTT / HTTPS
- ✓ Device registry



Operate & Integrate

Dashboards, OTA and enterprise links

- ✓ Dashboards
- ✓ OTA management
- ✓ Enterprise integrations

PLATFORMS

Devices, people and enterprise systems — connected end to end.

Android / iOS

AWS / Google IoT

MQTT / HTTPS

Mobile + server-side development deep dive

Ambimat combines embedded engineering with production-grade mobile and server-side development.

Mobile App Development

- ✓ Android & iOS
- ✓ BLE / Wi-Fi provisioning
- ✓ Real-time device status
- ✓ Firmware update flows
- ✓ Customer & admin apps
- ✓ Device onboarding
- ✓ Secure login & user management
- ✓ Alerts & notifications
- ✓ Diagnostics & logs

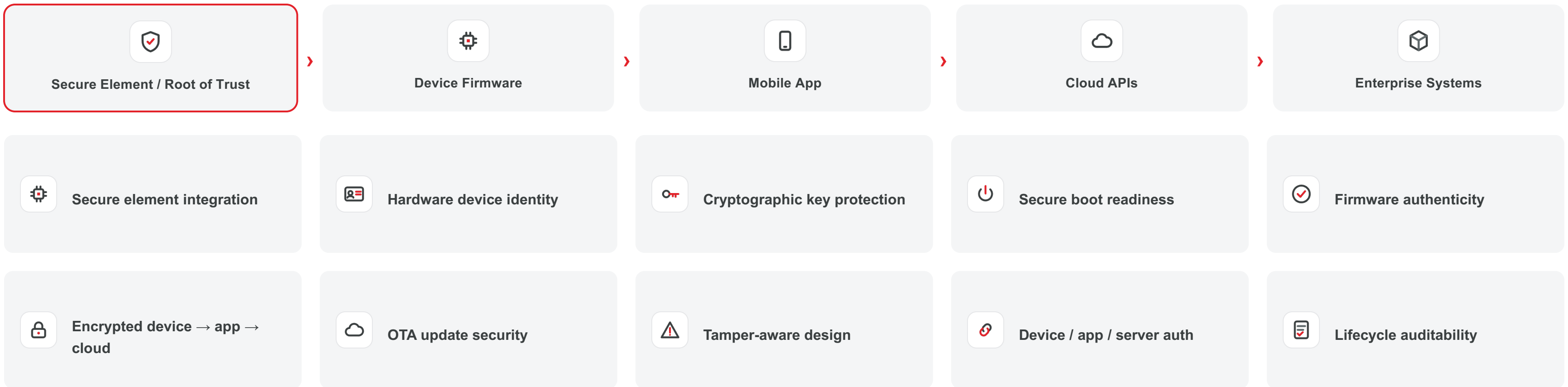
Server-Side / Cloud Development

- ✓ API development
- ✓ MQTT / HTTPS communication
- ✓ Data ingestion & storage
- ✓ OTA update management
- ✓ ERP / CRM integration
- ✓ Device registry & identity
- ✓ User & role management
- ✓ Dashboards & reporting
- ✓ Audit logs & monitoring

Nearly a decade of experience building secure connected products across hardware, firmware, mobile, cloud and deployment.

Why Ambimat is different: hardware-rooted IoT security

Not just an IoT development house — we design connected products with hardware-rooted trust built into the device from the start.



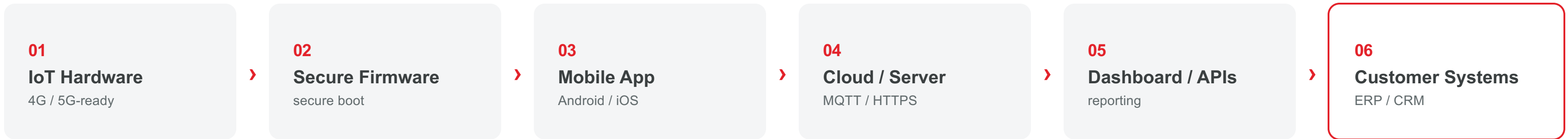
UNDER ONE GROUP

Hardware + firmware + mobile + cloud + secure-element expertise

Most IoT vendors stop at apps, firmware and dashboards — Ambimat adds the secure hardware and identity layer.

End-to-end secure IoT product development

From connected hardware to mobile apps, secure cloud platforms and production deployment — Ambimat has built end-to-end IoT systems for nearly a decade.



SECURE

Secured across the chain — secure boot · device identity · encrypted communication · authentication · OTA readiness · audit logs · role-based access

CONNECTIVITY & HARDWARE

Wi-Fi

BLE

4G LTE

NB-IoT

5G-ready

4G / 5G-ready hardware

Cellular-grade connectivity designed into the board.

~10 years

building secure connected IoT products, end-to-end

WHAT WE BUILD IN-HOUSE

✓ Hardware design & PCB

✓ Embedded firmware

✓ Mobile apps (Android / iOS)

✓ Backend & server

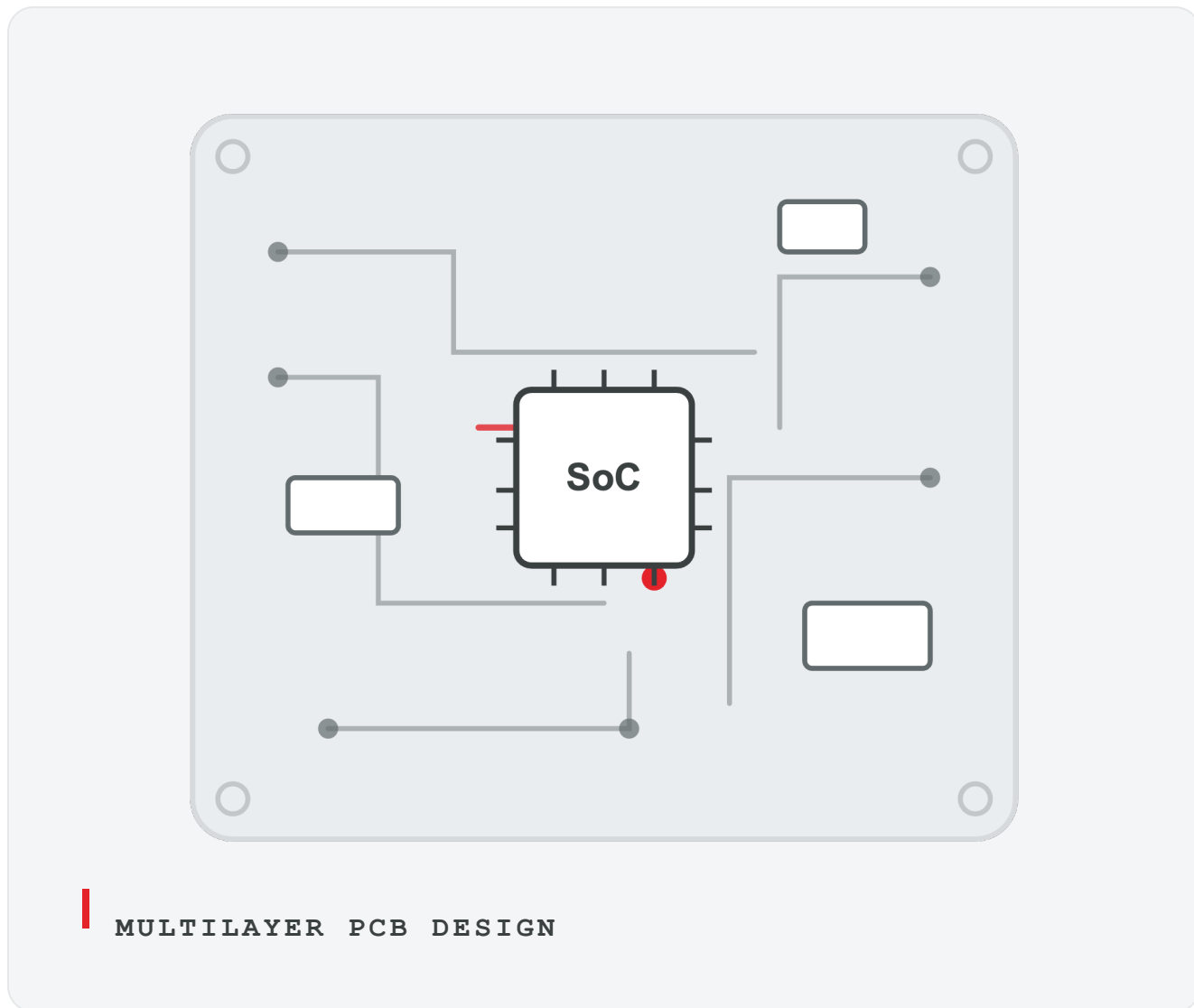
✓ APIs & dashboards

✓ Testing & deployment

One accountable team across hardware, firmware, mobile, cloud and deployment — no integration gaps between vendors.

PCB design capabilities

Multilayer board design built for signal integrity, manufacturability and connected-product readiness.



✓ **PCB architecture & layout**
Component placement & routing strategy

✓ **Signal integrity awareness**
Controlled impedance & high-speed nets

✓ **EMI / EMC-conscious design**
Lower emissions, better immunity

✓ **Prototype-to-production**
Smooth scale-up from POC to volume

✓ **Multilayer — rigid / flex / rigid-flex**
2-layer to high-layer-count stack-ups

✓ **Power & grounding**
Clean distribution & return paths

✓ **DFM / DFT readiness**
Built for manufacture and test

✓ **Industrial · telecom · connected**
Application-ready board designs

Rigid

Flex

Rigid-Flex





HDI

Multilayer




Up to 24 layers

Expertise across protocols & stacks

Wireless

-  Bluetooth Low Energy (with Mesh)
-  Wi-Fi (802.11 b/g/n)
-  Zigbee (with Mesh)
-  LoRa & Sigfox




Connectivity & M2M

-  Ethernet (Industrial & Consumer)
-  GPS / GNSS
-  GPRS / NB-IoT / CAT-M1

Payments & ID

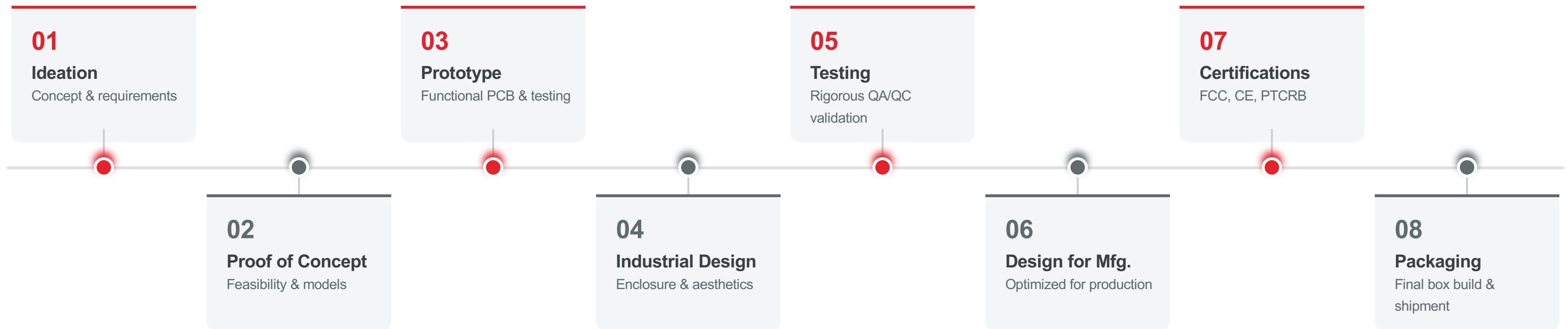
-  NFC (Near Field Communication)
-  UHF / RFID
-  NXP MiFare Family

Other

-  Sound (Audio Processing)
-  Proprietary Protocols
-  Custom RF Implementations

Our process — from idea to packaged product

A clear, repeatable progression from concept to box-packaged product.



We manage the entire lifecycle, ensuring a seamless transition from one stage to the next with minimal friction and maximum efficiency.

SECTION 02

Solutions & Product Portfolio

Ready-to-use solutions and integration-ready modules to reduce time-to-market.

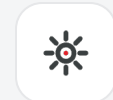
Eight solution families, one integration-ready core

Ready-to-use solutions and integration-ready modules across eight industries.



AmbiSpace
AEROSPACE

Mission-critical space & defence electronics



AmbiAutomation
INDUSTRIAL

HVAC bridge boards & OT building automation



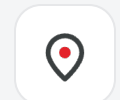
AmbiSense
MEDICAL

Cold-chain & contactless temperature monitoring



AmbiPay
PAYMENT

Contactless fare collection & transactions



AmbiCon
RETAIL

BLE beacons for proximity engagement



AmbiPower
UTILITY

Meter reading, DESU & RTUs to SCADA



AmbiLogistics
LOGISTICS

GNSS vehicle tracking & fleet telematics



AmbiSecure
SECURITY

Hardware-backed identity, access & transactions






Integration-Ready Core

Open APIs · Logistics track & trace · Security → ERP · Payments → gateway

AmbiSecure — secure identity, access & transactions

Hardware-backed security and identity solutions for transport, smart cities, authentication and enterprise deployments.

+ Also extending into SIM/eSIM-rooted authentication & OTP security via Ambimat's eSIM Security Platform.

 <h3>Closed Loop Ticketing</h3> <ul style="list-style-type: none">• Transit, campus & enterprise ticketing• Secure card + backend validation	 <h3>ONE Pass Card</h3> <ul style="list-style-type: none">• Unified access & identity credential• Multi-application card platform	 <h3>FIDO Validation Server</h3> <ul style="list-style-type: none">• FIDO2 / passkey ecosystem support• Relying-party integration	 <h3>BioKey Biometrics</h3> <ul style="list-style-type: none">• Biometric authentication & assurance• Secure enrolment & verification	 <h3>AmbiSEC Smart City Module</h3> <ul style="list-style-type: none">• City-scale credential & access• Secure platform modules
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STANDARDS & INTERFACES

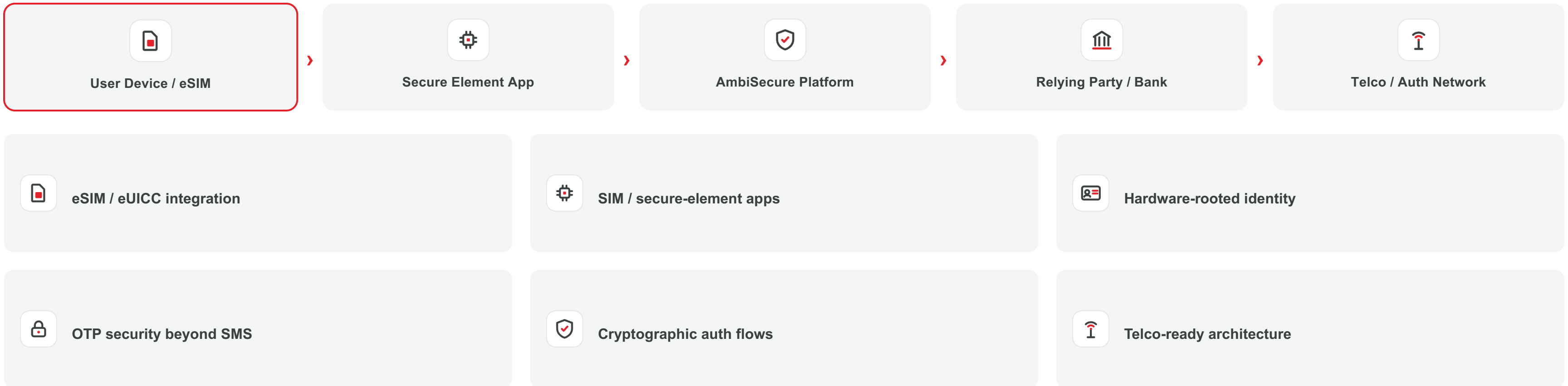
- FIDO2
- ECC P256
- ISO 14443 A/B
- NFC
- JavaCard
- USB-A/C



SCAN TO EXPLORE
Visit AmbiSecure
ambisecure.ambimat.com

eSIM Security Platform — OTP security beyond SMS

Extending AmbiSecure into telecom-grade authentication, secure-element applications and SIM/eSIM-rooted identity.



USE CASES

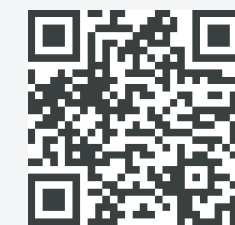
Banks

Fintechs

Telecoms

Enterprises

Government identity



SCAN TO EXPLORE
eSIM platform
esim.ambimat.com

AmbiPay — payment, transaction & value-transfer

Secure value-transfer across hardware, backend and apps — from contactless acceptance to merchant and enterprise integration.



Payment Acceptance

Contactless, EMV L1, NFC & QR-ready



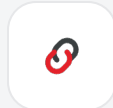
Transaction Workflows

End-to-end authorize, capture & settle



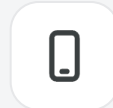
Secure Credential Handling

Hardware-protected keys & data



Device-to-Server Flow

Encrypted device → gateway → host



UPI / Payment-Device Readiness

Android OTG & payment-app integration



Merchant & Enterprise Integration

Gateways, ERP & acquirer systems

STANDARDS & INTERFACES

EMVCo L1

NFC Forum (Tags 1–5)

ISO 14443 A/B

MIFARE family

Sony FeliCa

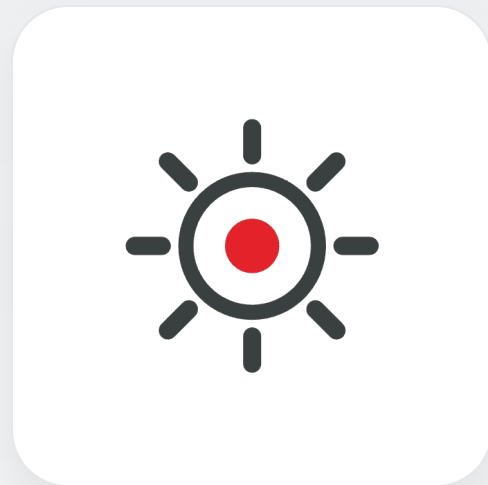
RS-232 / USB / OTG

TRANSACTION FLOW

Device → Secure Credential → Gateway → Merchant / ERP

Industrial Automation — AmbiAutomation

Preventive-Maintenance Ready



AMBIMAT GROUP

AmbiAutomation

Industrial

WHAT IT IS

Intelligent HVAC bridge boards and OT integration products to monitor building networks and lift productivity.

WHO IT'S FOR

Building management systems, energy management firms and preventive maintenance teams.

KEY DIFFERENTIATORS

- Multi-protocol: native BACnet IP & MODBUS RTU
- Connectivity: RS232/RS485/Ethernet/Wi-Fi + cellular

SPECS

- Field-ready: rugged IP65 enclosure option
- Proprietary RS232 communication support

SCAN TO EXPLORE



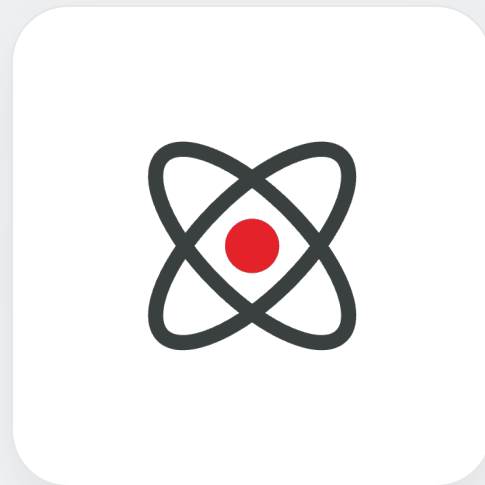
Visit the product site

ambiautomation.ambimat.com

Integration-Ready: Backend integration via JSON/HTTP over an encrypted channel to the server.

AeroSpace — AmbiSpace (+ AmbiDefence)

100% Mission-Critical Success



AMBIMAT GROUP

AmbiSpace

Aerospace

WHAT IT IS

Specialized electronics for mission-critical use on ground stations, space exploration and defence applications.

WHO IT'S FOR

Space research programs, aerospace OEMs, defence labs and test & evaluation teams.

KEY DIFFERENTIATORS

- Indigenous design house with 100s of products delivered
- Design partner for prestigious missions: Chandrayaan & Mangalyaan

PRODUCTS

- Spacecraft Interface Simulators
- Automated Weather Monitoring Systems

Integration-Ready: Rack-mount subsystems with motherboard/daughterboard modularity for future expansion.

Medical — AmbiSense

Tamper-Evident Design



AMBIMAT GROUP

AmbiSense

Medical

WHAT IT IS

Temperature monitoring: Smart Label for cold-chain logistics and AS-300 for contactless sensing.

WHO IT'S FOR

Healthcare facilities, pharma logistics providers and QA teams needing precise monitoring.

SMART LABEL

- Paper-thin flexible data logger with NFC interface
- ~13,500 samples, 3–6 months battery life

FEATURES

- CSV export for cloud-ready analytics
- Cost-effective disposable / reusable options

Integration-Ready: Easily integrated into existing products to send temperature data directly to the cloud.

Retail — AmbiCon

FCC Certified (2014)



AMBIMAT GROUP

AmbiCon

Retail

WHAT IT IS

BLE beacon solution broadcasting user-defined data for proximity engagement and location-based services.

WHO IT'S FOR

Retail environments needing proximity marketing, indoor geolocation and behaviour analytics.

KEY DIFFERENTIATORS

- Direct, real-time communication to mobile devices
- Complete Made-in-India hardware-to-software stack

STRENGTHS

- Proven reliability in retail deployments
- Low power consumption for extended battery life

Integration-Ready: Works with retail apps and analytics platforms via standard SDK/API patterns.

Utility — AmbiPower (+ UDR App)

Optimized for Field Operations



AMBIMAT GROUP

AmbiPower

Utility

WHAT IT IS

Utility solution with mobile meter-reading app, Data Extraction & Storage Unit (DESU) and Remote Terminal Units.

WHO IT'S FOR

Utility companies, AMI/AMR implementation teams and field-service operations.

KEY DIFFERENTIATORS

- DESU: multi-bus field data pushed to SCADA cloud via LAN/cellular
- RTUs connect digital/analog field devices to in-house SCADA

APPS

- Workforce & consumer apps optimize install/replace workflows and engagement

SCAN TO EXPLORE



Visit the product site

ambipower.ambimat.com

Integration-Ready: Direct data transmission to billing engine or head-end systems.

Logistics — AmbiLogistics

Accuracy: 2.5 m CEP



AMBIMAT GROUP
AmbiLogistics
Logistics

WHAT IT IS

Comprehensive Made-in-India vehicle tracking solution for seamless fleet monitoring and management.

WHO IT'S FOR

Fleet operators, logistics platforms and track-and-trace service providers.

KEY DIFFERENTIATORS

- High-precision GNSS: 72-channel u-blox M8, 2.5 m CEP
- Robust design: -25°C to 70°C operating range

FEATURES

- Enhanced security: SHA-256 data-integrity signature
- Compatible with existing backend infrastructures

Integration-Ready: Open APIs for direct connection to customer track & trace software, with optional Ambimat backend

Why Ambimat



Cost Effective



Single Point of Contact



Fast Turnaround Time



One-Stop Solution



Vendor Relationships Across Segments

PROVEN SUCCESS STORIES

Robotics

2019

Control system for robotic arm (upper-limb amputee application)

PASSED ISO 13485 PRE-CERT (1ST ATTEMPT)

Medical Device

2019

Hardware design for multi-therapeutic wound-healing device

PASSED ISO 13485 PRE-CERT (1ST ATTEMPT)

Industrial

2018–19

HVAC bridge board for preventive-maintenance automation

BACNET / MODBUS PROTOCOL DEPLOYMENT

Let's build your next product—faster, production-ready

business.development@ambimat.com

www.ambimat.com

NDA-safe: client names withheld where required for confidentiality.



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