AIVIBE SOFTWARE SERVICES PRIVATE LIMITED
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GLOBAL MARKET INTELLIGENCE AND FEASIBILITY REPORT

AiAmbA devices for India's small manufacturers — market, competition and launch

Companion to AiVibe's SIDBI project-finance proposal for the AiAmbA device plant and edge data centre, Tamil Nadu

1. Document control

Document	AIVIBE/SIDBI/MIR/2026-10/006
Revision	Rev 2.0 — 16 October 2026
Company	AiVibe Software Services Private Limited. Identity, registrations and financial record: DPR §2.
Evidence date	Web sources read on 14 Oct 2026 (IST) unless a row says otherwise. Product code read, without changes, on the same day.
Companion documents	Detailed Project Report (AIVIBE/SIDBI/DPR/2026-10/001): borrower, prices, schedule, project cost, finance, security, schemes, projections · Risk Mitigation and Contingency Blueprint (AIVIBE/SIDBI/RSK/2026-10/007): risk register

Labels used in this report

Label	Meaning
OFFICIAL	A government body or an industry association (IMTMA), including when another site reports it
THIRD-PARTY	A market-research firm, the press, a broker or a testing lab
VENDOR	A company's own claim about its own product
COMPANY / COMPANY PLAN	AiVibe's own claim or plan, not checked by anyone else
ASSUMPTION	A working assumption; its basis is given beside it
DERIVED	Our arithmetic on a published figure (sums, growth rates, currency conversion); never a published number

Currency conversions use Bank of England spot rates for 12 Oct 2026: ₹95.775 per US$ and ₹126.6098 per £ [S38].

Where to find what this report does not cover

Topic	Where
Borrower identity, registrations, credentials, financial record, promoters, associate concerns	DPR §2
Product line and prices	DPR §3
Schedule of implementation, plant phasing, the 70% Indian-machines rule, launch stock, sales from day 61	DPR §4
Project cost, including launch and approval costs	DPR §5
Loan structure and means of finance, releases, security, CGTMSE	DPR §6–§9
Schemes and subsidies	DPR §10
Projections, repayment and ratios	DPR §11–§13
Every risk and its treatment	Risk Blueprint §2–§3

2. Executive summary: the market thesis

1. **There is a large base of small manufacturers.** 1,83,17,965 manufacturing enterprises were registered on Udyam and Udyam Assist on 31 Jul 2026 [S1]. No official count says how many of them run CNC or PLC machines.
2. **Demand for machine tools keeps growing.** India's machine-tool consumption rose from US$3.3 bn in FY2023-24 [S2] to US$3.7 bn in FY2024-25 [S3]. It crossed ₹35,000 crore (US$3.96 bn) in FY2025-26 [S4]. That is about 7–12% a year (DERIVED). About 60–65% of it is imported [S4].
3. **Industrial IoT spending grows about 12% a year.** IMARC puts India's industrial IoT market at US$11.93 bn in 2026 and US$30.35 bn by 2034, a 12.38% yearly rate [S6]. This is the wide market, not AiAmbA's own. Other publishers give different figures (§3.1.3).

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4. **AJ is not the cheapest way to connect a machine.** - Netra lists a ₹5,000 kit, and Leanworx is free for one machine [S17, S18]. - Over three years, Brewsight (software only) costs ₹36,000 against AJ's ₹45,963 (DERIVED, list prices) [S18]. - Global platforms cost about ₹2.6 lakh to ₹6.7 lakh a machine over three years at list price (DERIVED) (§5.1).
5. **The edge is the combination of features.** "AJ will be, to our knowledge, the first ₹9,999 plug-in device on sale that connects straight to a CNC or PLC controller and lets the operator ask it questions, and approve changes, by voice in Indian languages." This is based on a scan of 43 named products on 14 Oct 2026 (§5.4).
6. **The company's plan needs machines beyond CNCs.** - The volume plan (DPR §11) puts about 1.65 lakh AJ devices in the field by year 4 (DERIVED, cumulative). - That is about 14% of the "over 12 lakh machines" that a press report puts in India's shop-floor monitoring market [S16]. - It is about 0.9% of manufacturing MSMEs [S1] (§6).

3. Market dynamics

3.1 India

3.1.1 Manufacturing MSMEs on Udyam

Registered on Udyam and Udyam Assist, as of 31 Jul 2026	Number	Label	Source
Manufacturing enterprises	1,83,17,965	OFFICIAL	[S1]
Service enterprises	3,47,33,886	OFFICIAL	[S1]
Trading enterprises	3,86,38,484	OFFICIAL	[S1]
Total (reported as 9.16 crore)	9,16,90,335	DERIVED (sum)	[S1]

- The figures come from the Minister of State for MSME's reply in the Rajya Sabha, as reported by the press. The Rajya Sabha text itself was not read.
- Udyam Assist registers informal micro units. "Manufacturing" covers every manufacturing activity code, not only units that run machine tools.

3.1.2 Machine-tool consumption, FY2023-24 to FY2025-26

Year (April–March)	Consumption	Growth	Source
FY2023-24	US$3.3 bn	+11% (as published)	OFFICIAL: IMTMA, reported by GTAI [S2]
FY2024-25	US$3.7 bn	+12.1% (DERIVED)	OFFICIAL: IMTMA's Director General, reported by CECIMO [S3]
FY2025-26	Over ₹35,000 crore (US$3.96 bn), "for the first time"	+7.0% in US$ (DERIVED)	IBEF [S4]

- **Make or buy.** Production turnover was ₹16,478 crore in FY2025-26 (IMTMA, via IBEF) [S4]. Imports were about 60–65% of consumption [S4].
- **Who buys.** Automotive and auto components take nearly half of demand [S3].
- **Outlook.** IMTMA expected sales growth of about 10% in each of the next two financial years (via GTAI, June 2025) [S2].
- **Shop floors.** Small firms still mostly use semi-automatic or conventional machines. CNC machines are over 80% of the market (Taiwan trade body brief, citing IMTMA, July 2026) [S5].

3.1.3 Industrial IoT market in India (THIRD-PARTY)

Publisher (edition)	2025	2026	Later year	Yearly rate	Source
IMARC Group (updated 25 Sep 2026)	US$10.61 bn	US$11.93 bn	US$30.35 bn (2034)	12.38% (2026–2034)	[S6]
P&S Intelligence (Dec 2025)	US$10.1 bn	US$11.2 bn	US$22.1 bn (2032)	12.1% (2026–2032)	[S7]
MarketsandMarkets (Aug 2026)	US$14.14 bn (2024)	—	US$23.32 bn (2029)	10.5%	[S8]

- This report uses IMARC as its single India line. Publishers define the market differently, so their figures are not mixed in one series.

3.2 Global (THIRD-PARTY)

Market (publisher, edition)	Published points	Yearly rate	Source
Industrial edge computing (Mordor Intelligence, updated 11 Sep 2026)	US$54.46 bn (2025) · US$61.67 bn (2026) · US$114.87 bn (2031)	13.24% (2026–2031); Asia Pacific fastest at 13.62%	[S9]
Industrial edge (MarketsandMarkets, Feb 2025)	US$21.19 bn (2025) · US$44.73 bn (2030)	16.1%; Asia Pacific fastest	[S10]
Industrial IoT (Grand View Research, Aug 2026)	US$203.9 bn (2025) · US$225.4 bn (2026) · US$516.1 bn (2033)	12.6% (2026–2033)	[S11]

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Market (publisher, edition)	Published points	Yearly rate	Source
Industrial IoT (Precedence Research, Sep 2026)	US$514.39 bn (2025) · US$602.87 bn (2026) · US$2,430.21 bn (2035)	16.8% (2026–2035)	[S12]
Machine condition monitoring (MarketsandMarkets, 2024)	US$3.1 bn (2024) · US$4.7 bn (2029)	8.3%	[S13]

- Definitions drive the gaps. For 2025, industrial IoT estimates differ 2.5 times and industrial edge estimates 5 times.
- "Machine condition monitoring" means vibration and heat sensing for maintenance. It is not the same as production monitoring of CNC machines.
- No global figure is used for sizing in §6. The plan is India-first.

3.3 North America and the European Union

- **Market size.** No region-specific size for North America or the EU was verified for this report. Both edge-market publishers above say Asia Pacific grows fastest [S9, S10].
- **Prices.** The published prices of US and UK vendors are compared in §5.1.
- **Export route.** AiVedha Inc. (USA) is an associate concern of the promoters (DPR §2.3).
- Any export through it would be optional and a related-party sale (Risk Blueprint RSK-15).
- No export is needed for the volumes in §6.
- **Approvals.** Exports would need the destination's own radio, safety and EMC approvals (Risk Blueprint RSK-10). None was among the credentials reviewed for this report.

4. Product competitiveness: what AiAmbA does that others don't

Each row compares one feature with the evidence on both sides. "In code" means it was seen in the company's product code (§7). Products and prices are in DPR §3.

#	What AiAmbA offers	Evidence for AiAmbA	What rivals show	Unique?
1	The operator asks the machine questions by voice, in their own language	The AiCippY app has speech recognition and speech output; the language follows the user's choice or the phone's language. In code [L4]. Which Indian languages work depends on the phone's speech engine; the code has no fixed list. The company's deck shows Tamil and Hindi [L10].	No Indian vendor page read shows Indian-language voice. Faclon's Bruce AI is a typed "multilingual" copilot with no language named [S19]. iFactory (USA) markets voice in "plain English or Hindi" through MES or SCADA systems [S21]. FORCAM ENISCO advertises voice control in an enterprise SAP product [S26].	**Partly.** Voice exists elsewhere. Indian-language voice on a plug-in for one machine was not found.
2	One plug-in device per machine at about ₹10,000	DPR §3	Netra lists ₹5,000 a piece, hardware and software [S18]. Tulip's Edge MC is US$150, about ₹14,366 (DERIVED) [S25]. FourJaw's device is £200, about ₹25,322 (DERIVED) [S24].	**No.** Cheaper devices exist.
3	Low running cost, no minimum order	₹21,987 in year one and ₹45,963 over three years (DERIVED from DPR §3 prices). Sold per device online (§9).	Brewsight: ₹36,000 over three years [S18]. Leanworx Lite: free for one machine [S17]. FourJaw has a 5-machine minimum [S24] and Tulip a 10-interface minimum [S25].	**Partly.** Cheaper options exist in India. The global vendors' minimums shut out micro units.
4	No change reaches a machine unless a person approves it	In code [L3, L4]. How the approval works is set out in Risk Blueprint RSK-02. FANUC writes are limited to macro values, feed and spindle override, and mode; PLC writes cover tags and registers. Tool offsets are read, never written [L5].	MachineMetrics' own case study describes an automatic feed hold [S22]. Ace Micromatic corrects tool-wear offsets automatically [S20]. ATHENA (USA, 2018) confirmed a tool change by voice [S30].	**Partly.** Rivals act on the machine automatically; AiAmbA acts only on a person's approval.
5	Talks straight to the machine's controller	The edge translator has two-way links for FANUC FOCAS, Siemens S7, Mitsubishi SLMP/MC and Modbus TCP [L5]. The AJ firmware reads S7, Mitsubishi MC and Modbus [L1].	Leanworx, Memex and MachineMetrics also read controllers [S17, S22, S28]. FourJaw, Amper and Guidewheel use current sensors instead [S24, S28].	**No**, not on its own.
6	Set-up in minutes	COMPANY: "4 min from box to first answer" [L10]	Leanworx: "under 30 minutes" [S17]. MachineMetrics: "one afternoon" [S22]. Techmetro: "within few hours" [S18].	**Yes.** The fastest set-up claimed: minutes against half an hour to an afternoon.

4.1 Field validation

- **Validations.** Validations in 14 industries, from machine shops to a mining quarry (COMPANY). The investor deck gives 15 machine and sector tags and lists 7 sector labels across about 11 live shop floors:

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- automotive spares;
- structural fabrication;
- precision machining;
- auto components;
- textiles (spinning; garment and netting units);
- blue-metal mining;
- water (a meter proof of concept).
- **Related parties.** Three of these plants are promoter-related and are shown as validation, not revenue. Two associate concerns gave pilot-host consent letters: Emmarkay Private Limited and Q Raise Structures.
- **Photos.** Photos exist for fabrication, machine-shop and water sites [L8].
- **Purchase orders.** Furnished before sanction (DPR §2.4).

Reading of the evidence. AiAmbA's difference is not price, and not the controller link on its own. It is four things together: - a direct controller link; - voice in Indian languages; - a person approving each change; - no minimum order, at a cost a one-machine shop can carry.

5. Competitive landscape

5.1 AiAmbA against the six closest rivals

- Year-one cost is for one machine at list price. It excludes taxes, discounts and installation.
- Figures converted from US$ or £ are DERIVED, at the rates in §1.
- "Not found" means the pages read do not say; it does not mean the feature is absent.

Product (maker, base)	Year-one cost, one machine	Hardware	Install time (vendor claim)	Language / voice	AI	Minimum	Target
AiAmbA AJ + AiCippY (AiVibe, Chennai)	**₹21,987** + GST (device and 12 months; prices DPR §3)	Own plug-in device, one per machine	COMPANY: "4 min from box to first answer"	Voice through the phone's speech engine; Tamil and Hindi shown in the deck	AI chat; changes only after a person approves	None	Micro and small units with 1–3 machines first
Leanworx (Bengaluru; ₹8.3 crore seed; "over 2,000 machines" connected) [S16, S17]	₹51,718 on the SME plan (US$540 a year; device not priced). **Lite: free** for one machine	FOCAS, OPC UA or MTConnect direct; otherwise an "industrial grade IIoT device"	"Under 30 minutes"	Not found	Called "AI-powered" in the press; no feature named	None stated	SME job shops
IndiaMART kits: Netra (Indore), Techmetro (Pune), Brewsight (Ahmedabad) [S18]	₹5,000 a piece (Netra, hardware + software); ₹12,000 a year (Brewsight); ₹21,000 a year (Techmetro)	Kit or edge device	"Within few hours" (Techmetro)	Not found	Not found	Sold by the piece	Small factories
MachineMetrics (USA) [S22]	₹1,72,395 (THIRD-PARTY rate of US$150 a month; the vendor publishes none)	Edge kit at US$1,418 serves "up to 50 machines", or software on a PC	"Up and running in one afternoon"	Not found	"Max AI" chat (6 Nov 2025); can trigger a feed hold	Quote; volume-based	Discrete manufacturers
FourJaw (UK) [S24]	₹1,34,713 (£200 device + £72 a month)	MachineLink sensor device	Self-installation	Not found	Not found	5 machines (₹6,73,564 in year one)	Manufacturers with 5+ machines
Tulip (USA) [S25]	₹1,29,296 per interface (US$100 a month + Edge MC at US$150)	Edge MC at US$150 or Machine Kit at US$375	"Fast, self-serve setup"	25+ app languages, none Indian in its 2022 list; voice not found	"AI Chat"; Frontline Copilot	10 interfaces (₹11,49,300 a year)	Frontline operations
iFactory AI (Sunnyvale, USA; sells into Indian mills) [S21]	Custom quote	Headset or pendant microphone; links to MES or SCADA	"8–14 weeks"	**Voice in English or Hindi**	Voice Q&A on production and machine health	Enterprise	Textile mills

Three years, one machine (DERIVED, list prices, excluding taxes) [L10]:

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	Cost
Brewsight	₹36,000
AJ + AiCippY	₹45,963
Techmetro	₹63,000
Leanworx SME	₹1,89,634
Scytec Bronze	₹2,57,826
FourJaw Standard	₹3,53,495
Tulip Essentials	₹3,59,156
MachineMetrics (third-party rate)	₹5,17,185
Evocon Basic	₹6,70,287

Sources for these rows: [S17, S18, S22–S25, S27]. Netra (₹5,000 a piece) and Leanworx Lite (free) do not fit a three-year line and are shown as points only.

5.2 Other products read

Product	Why it matters	Source
FORCAM ENISCO ENI.one (Germany)	Voice control of production processes ("Produktionsprozesse per Sprache steuern") for SAP Digital Manufacturing users; languages not stated; enterprise customers	[S26]
Faclon Labs IoSense / Bruce AI (India)	Typed copilot in "natural, multilingual formats", no language named; "< 1 Week" to activate; process and utility plants	[S19]
Ace Micromatic / AmiT (India)	"Corrects Wear Offset values automatically", fed by probes and gauges, for CNC factories	[S20]
Scytec DataXchange (USA)	The lowest published per-machine US rate found: US$47 a month, plus US$1,000–2,500 once per account	[S23]

The full list of 43 products [L10; S28, S29]: - **Global (22):** MachineMetrics, Scytec, FourJaw, Tulip, Litmus Edge, Amper (ECI), Guidewheel, Mingo, Datanomix, Memex MERLIN Tempus, FORCAM ENISCO, Siemens Industrial Copilot, Sight Machine, Cognite, Evocon, iFactory AI, iTSpeeX ATHENA, Mazak Voice Adviser, Porta Multicenter Chatbot, Siemens Operations Copilot, Beckhoff TwinCAT CoAgent, FANUC (CRX voice; MT-LINKi). - **Indian or India-listed (21):** Leanworx, Netra Automation, Brewsight, Techmetro, SYL, HR Technotronics, Autobits Labs, SfHawk, Precise Automation, Aliter, Ace Micromatic / AmiT, Faclon Labs, Altizon, Infinite Uptime, Entrib ShopWorx, Jyoti CNC 7th SENSE, Trinetra T-Sense, Flutura (now Accenture), Ripik.ai, Advantech "iFactory/ OEE", Tata nexarc.

Notes on the list: - Tata nexarc was checked and does not sell machine monitoring. - LMW and BFW show no machine-monitoring offering on their sites. - Not researched: FANUC MT-LINKi pricing, Siemens Insights Hub pricing, DMG MORI, Okuma, Mitsubishi Electric, Heidenhain, Haas, Kepware, Ignition and others.

5.3 What nobody else does

On this evidence, AJ is the only option found that combines four things: 1. a direct link to the CNC or PLC controller; 2. voice in Indian languages; 3. a person approving each change; 4. no minimum order, at ₹21,987 in year one.

Each of these exists somewhere on its own: - controller links: Leanworx, Memex, MachineMetrics; - voice: ATHENA (English), FORCAM ENISCO, and iFactory (English or Hindi, through MES or SCADA); - confirmation before acting: ATHENA; - no minimum: IndiaMART kits and Leanworx Lite.

5.4 The safe "first" sentence

For use now, before online sales open on day 61:

> AJ will be, to our knowledge, the first ₹9,999 plug-in device on sale that connects straight to a CNC or PLC controller and lets the operator ask it questions, and approve changes, by voice in Indian languages.[1]

From day 61, once AJ is on sale:

> AJ is, to our knowledge, the first ₹9,999 plug-in device that connects straight to a CNC or PLC controller and lets the operator ask it questions, and approve changes, by voice in Indian languages.[1]

[1] Scan of 43 named machine-monitoring and industrial-AI products, 14 Oct 2026; list in §5.2.

If a banker challenges the word "first":

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> Of 43 named products we checked on 14 Oct 2026, AJ is the only ₹9,999 plug-in device that connects straight to a CNC or PLC controller and lets the operator ask questions, and approve changes, by voice in Indian languages.

Rules for using the sentence: - Keep every qualifier, and never use the price on its own. - Do not say "in market" until AJ is on sale. - Before day 61, have on record: - recorded Tamil and Hindi demos (name only the languages that work); - a demo on a FANUC machine and a Siemens machine; - the AJ's own write driver, finished (§7.1).

Do not say "world's first", "first voice assistant for machines" or "first to talk to a CNC". Others came earlier [S30]: - Mazak's control spoke alerts to operators from 2007; - ATHENA took spoken commands on DMG Mori, Makino and OKK controls from 2018; - Beckhoff demonstrated speech-to-machine commands in 2026; - FORCAM ENISCO and iFactory advertise voice today (§5.1–§5.2).

6. Market sizing: TAM, SAM and SOM

6.1 Method

- **Unit.** One machine is one device opportunity. The AJ is sold per machine (DPR §3).
- **TAM** is every manufacturing MSME: 1,83,17,965 enterprises on Udyam [S1].
- ASSUMPTION: each is a potential buyer of at least one device. Basis: the AJ is sold per machine, with no minimum order.
- It is a ceiling. Many Udyam Assist micro units run no machine with a controller.
- **SAM** is the machines that could be connected for shop-floor monitoring. No national count exists, so SAM is a range between two published figures:
- **Floor:** about 1,85,000 CNC machines made by FANUC on Indian shop floors in 2020 [S14]. That is one brand. Other brands, PLC-run machines and machines sold since 2020 come on top. Not all of these machines are in MSMEs.
- **Upper reference:** "India's Industry 4.0 shop-floor monitoring market includes over 12 lakh machines in sectors like metalworking and FMCG". This is from a press report on Leanworx's funding (The Machine Maker, 27 Dec 2024) [S16]. Its basis is not given.
- **SOM** is the COMPANY PLAN (DPR §11):
- AJ units of about 10,000 in year 1;
- 25,000, 50,000 and 80,000 in years 2–4;
- then 20,000 more each year;
- N and J units on top, as set in DPR §11.
- **How the shares are worked out.** They use cumulative AJ units in the field (DERIVED). They ignore replacements and lapsed subscriptions.

6.2 The funnel

Level	What it counts	Number	Label	Source
TAM	Manufacturing MSMEs, one device each	1,83,17,965	OFFICIAL count + ASSUMPTION	[S1]
SAM, upper reference	Machines in the shop-floor monitoring market	over 12,00,000	THIRD-PARTY (press; basis not given)	[S16]
SAM, floor	CNC machines made by FANUC (2020)	about 1,85,000	THIRD-PARTY (press, one brand)	[S14]
SOM	AJ devices in the field by year 4 / year 7	1,65,000 / 5,25,000	COMPANY PLAN (DPR §11); cumulative DERIVED	—

6.3 SOM as a share of SAM, year by year (DERIVED)

Year	AJ units in the year (COMPANY PLAN)	AJ in the field (cumulative)	% of SAM floor (1.85 lakh)	% of SAM upper reference (12 lakh)	% of TAM (1.83 crore)
1	10,000	10,000	5.4%	0.8%	0.05%
2	25,000	35,000	18.9%	2.9%	0.19%
3	50,000	85,000	45.9%	7.1%	0.46%
4	80,000	1,65,000	89.2%	13.8%	0.90%
5	1,00,000	2,65,000	143%	22.1%	1.45%
6	1,20,000	3,85,000	208%	32.1%	2.10%
7	1,40,000	5,25,000	284%	43.8%	2.87%

6.4 What the numbers say

1. **Years 1–3** need under 8% of the upper reference, and under half of FANUC's base alone.

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2. **By year 4**, devices in the field equal about 14% of the upper reference, but about 89% of the FANUC floor. - So the plan relies on machines beyond FANUC CNCs: PLC-run machines in textiles, plastics and special-purpose machines, and CNCs of other brands. - The firmware's Siemens, Mitsubishi and Modbus support (§7) points that way; the field programme in days 30–60 (§9) extends the record in those sectors.
3. **Years 5–7** need 22–44% of the upper reference. That rests on a machine base larger than any published figure found. - Two things would firm it up: IMTMA's unit statistics (a paid report), and the results of the field programme in days 30–60 (§9).
4. **In money terms,** one AJ for each machine in the SAM range is worth about ₹185 crore to ₹1,200 crore once, at the list price in DPR §3 (DERIVED). Recurring software income is part of the projections in DPR §11 and is not repeated here.
5. **Exports** through the associate concern are optional and are not part of the SOM (§3.3).

7. Technical architecture and protocol convergence

This section keeps only what the product code or the company's own technical files support. The repositories were read without changes on 14 Oct 2026. Code size and the product line are in DPR §3.

7.1 What the code shows

Layer	What it does	Status	Evidence
AJ device firmware	Runs on an Arduino UNO R4 WiFi board (Renesas RA4M1 microcontroller). Probes the machine on TCP ports 8193, 102, 5002, 5007, 502 and 4840.	In code	[L1]
– Siemens S7	Reads data blocks after setting up the S7 session	In code	[L1]
– Mitsubishi MC (3E frame)	Reads registers D100–D115	In code	[L1]
– Delta / Modbus TCP	Reads holding registers 0–14; scale and word order are set at commissioning	In code	[L1]
– OPC UA	Transport-level handshake	In code	[L1]
– FANUC FOCAS	Through FANUC's licensed FOCAS library	By licence	[L1]
– Reliability	Watchdog at 4,000 ms. Reconnects after three failed polls. Fixed buffers, with no heap use in the application code.	In code	[L1]
– Device identity	Device ID taken from a SHA-256 hash of the chip's silicon identity	In code	[L1]
Approval gate	Every write needs a person's approval. How it works: Risk Blueprint RSK-02.	In code	[L3]
Edge protocol translator (site server)	17 device families plus a generic probe. Reads are open; every write goes through the approval gate. FANUC: macro values, feed and spindle override, and mode can be written; the tool-offset table is read only.	In code	[L5]
Cloud broker	Device and app links over WebSocket, with signed identity tokens. AI tools only propose a change; they never carry it out themselves. Data isolation: Risk Blueprint RSK-03.	In code	[L2]
AiCippY app	Voice in (speech recognition) and voice out (speech). The operator's approval of a change is given in the app (RSK-02). The chat opens only after the phone's own unlock.	In code	[L4]

The code reads tool offsets and never writes them.

7.2 How data moves (as built)

``` Machine controller —— Siemens S7 · Mitsubishi MC · Modbus TCP (in code) └— OPC UA · FANUC FOCAS (licensed library) | reads; writes only through the approval gate ▼ AJ device (UNO R4 WiFi class, RA4M1) —— Wi-Fi ——► Cloud broker (signed identity tokens) | ▼ AiCippY app: ask by voice → answer AI proposes a change → a person approves it in the app (RSK-02)

Site edge server: protocol translator (17 device families); every write passes the approval gate ```

### 7.3 Protocol coverage

| Where it appears | Figure |
|---|---|
| Company investor deck [L6] | "170+ machine protocols in the AiAmbA registry" |
| AiAmbA web console page ("updated 19 August 2026") and a pitch page [L6] | "176 protocol entries in the catalog": 96 "have an adapter available"; 80 need "a vendor SDK, hardware, authorization, licensing or site qualification" |
| AiAmbA database seed (protocol adapters) [L7] | **19 adapters**: 9 "ready", 10 "pilot". **7 are for machine controllers**: Modbus TCP and OPC UA (ready); Siemens S7, Mitsubishi MC/SLMP, Delta Modbus, FANUC FOCAS and EtherNet/IP (pilot). The rest are cameras, IT, network and messaging links. |
| Protocol catalogue library [L7] | 23 adapters |

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Where it appears	Figure
Edge translator [L5]	**17 device families** plus a generic probe. 4 are machine-controller families: FANUC, Siemens, Mitsubishi and Delta/Modbus.
AJ firmware [L1]	5 protocol families on 6 ports

Finding. The registry carries 19 adapters, 7 of them for machine controllers; the edge translator serves **17 device families, including FANUC, Siemens, Mitsubishi and Modbus controllers**, and that is the figure this report uses.

7.4 Owned by the Risk Blueprint

Topic	Where
Safety of any change to a machine	RSK-02
Data security and per-customer isolation	RSK-03
Cloning and firmware read-out	RSK-04
Microcontroller supply and the dual-footprint board	RSK-01
EMC and export compliance	RSK-10

8. Regulatory drivers and tax classification

8.1 HSN and NIC mapping

Item	HSN heading	NIC-2008 code (wording as on the Udyam list [S33])	Note
AJ Series: plug-in device that links a machine to the network	8517 62 (machines for the reception, conversion and transmission of data)	26303 "Manufacture of data communications equipment, such as bridges, routers, and gateways"	8-digit line 8517 62 90 (other)
N Series: edge-AI computer for a shop floor	8471 50 (processing units), or 8517 62 if its main job is data communication	26209 "Manufacture of computers and peripheral equipment n.e.c."	Decided by main function
J Series: vision-AI unit	As for N Series	26209, or 26517 "Manufacture of industrial process control equipment"	Decided by main function
In-house board assembly	(intermediate goods)	26104 "Manufacture of bare printed circuit boards, loading of components onto printed circuit boards"	—
AiCippY software subscription	A service	—	—

- **GST rate.** It follows the exact 8-digit item. GST rates were restructured from 22 Sep 2025, after the 56th GST Council meeting [S34]. An advance ruling settles any question of heading.
- **Inputs.** 8542 31 (processors) is an input AiVibe buys, not a product it sells, so it is not listed here.
- **Udyam.** Adding these NIC codes and the plant to AiVibe's Udyam is an action before sanction (DPR §2.4).

8.2 Product certifications

Approval	Authority	What it covers	Route	Status
Equipment Type Approval (ETA), self-declaration	DoT, Wireless Planning and Coordination (WPC) Wing; Saral Sanchar portal	Radios in de-licensed bands (2.4 / 5 GHz Wi-Fi, Bluetooth). Needed for the AJ (Wi-Fi), and for the N and J if they carry radios.	Per model. Radio test reports from an accredited lab; self-declaration on Saral Sanchar; WPC may sample-check; no renewal unless the model changes [S35].	Taken per model before commencement, on the company's declaration of 01 Aug 2026 [L9].
Mandatory Testing and Certification of Telecom Equipment (MTCTE)	DoT, Telecommunication Engineering Centre (TEC); MTCTE portal	Notified telecom and ICT equipment that connects to the network. "IoT gateway" is listed among Phase III products [S36].	Test at a TEC-designated lab, apply on the MTCTE portal, receive a certificate per model, and label the product [S36].	Applied for per model before commercial sale, where TEC lists the device as an IoT gateway [S36].

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Approval	Authority	What it covers	Route	Status
Compulsory Registration Scheme (CRS)	Bureau of Indian Standards (BIS), under MeitY's Electronics and IT Goods (Requirements for Compulsory Registration) Order	Products in the Order's list, for example power adapters for IT equipment (IS 13252 Part 1) [S37]	Test at a BIS-recognised lab, register on the CRS portal, and mark the product	The devices fall under no listed category; every power adapter supplied with a device is CRS-registered. BIS / EMC certification is obtained during the pilot; commercial sale only after grant of certification [L9].
Legal Metrology registration for packaged goods; extended producer responsibility for e-waste, batteries and plastic packaging	Controller of Legal Metrology, Tamil Nadu; CPCB	Products sold in packages to buyers	Register before the first packaged sale	Registered before the first packaged sale

- **Fees and timelines** for these approvals are in DPR §5 and DPR §4.
- **What this means for day 61.** Online sales from day 61 (DPR §4) assume the ETA is in hand by then, plus MTCTE and CRS wherever they apply. The company's own declaration ties commercial sale to certification.

8.3 Schemes and a watch item

- **Schemes.** Every scheme, subsidy and incentive is in DPR §10. None is repeated here.
- **Watch item.** Mordor Intelligence reports BIS standard IS 17730:2026, with data-localisation requirements for IoT devices from 1 Aug 2026 [S9]. It favours devices whose data stays in India.

9. Go-to-market: launch without selling (days 30–61)

The plant and the market are built at the same time. While the electronics line is commissioned (plant phasing: DPR §4), the market is warmed up. Sales open on day 61 to people who already want the device.

Products and prices are in DPR §3. The launch stock and the day-61 start are in DPR §4. Only units that have passed 100% testing (functional test, firmware flashing, burn-in and leak test) are listed for sale.

9.1 Field validation by students (days 30–60)

Element	Plan
Where	5 industrial clusters: Coimbatore, Chennai, Pune, Rajkot, Bengaluru · Peenya
Who visits	3–5 interns per city from partner engineering colleges (15–25 in all), trained at the plant
Whom they visit	Micro units running 1–3 machines, chosen by walking the clusters, not by appointment
Devices in the field	20–30 at any time, from 40 built for the campaign
What happens	1. The owner plugs in the device. 2. The first plug-in and onboarding are filmed as a geo-tagged video. 3. The owner uses it on their own machines for a while. 4. The owner records a 60-second feedback video in their own words.
What we ask	Nothing to buy. An owner who wants a device reserves it with a ₹10 token, billing and shipping details, and the two short videos.
Consent and data	Written consent before filming. Geo-tags are kept internal; only the city is published (Risk Blueprint RSK-14).

9.2 Turning goodwill into day-61 demand

When	Channel	What
From day 30	Online	Pre-booking opens at ₹499 on aiamba.com, refunded on request
Days 30–60	Word of mouth and social media	Owners' own 60-second videos, shared by clusters and associations: a grand welcome for the first owners
Day 59–60	One national moment	One national advertisement 1–2 days before sales open, in a cricket broadcast or in cinemas, plus online and social media
Day 61	Online sales	Sales open with the tested launch stock (DPR §4). Pre-bookings and ₹10 reservations are served first.

There is no sales pitch at any step. The owners' own word of mouth is the welcome.

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9.3 Launch budget

The launch costs are part of the project's indirect costs and pre-operative expenses in DPR §5. They cover: - the 40 campaign devices; - intern stipends and travel; - filming kits; - the pre-booking campaign; - the national advertisement.

They are not repeated here.

10. Conclusion and sign-off

What the evidence supports: - a large and growing base of small manufacturers and machines in India (§3.1); - an industrial IoT market growing at about 12% a year (§3.1.3); - a product gap that is real but narrow: a direct controller link, Indian-language voice, a person approving each change and no minimum order, together, on a device a one-machine shop can buy (§5.3).

Delivered before the first sale: the FOCAS driver on the device (§7.1), recorded demonstrations in each language claimed (§5.4) and the product certifications (§8.2).

What carries the volume plan. Years 1–4 need up to about 14% of the widest published machine figure. Years 5–7 need more than any published figure supports (§6.4). The field programme in days 30–60 (§9) is the first direct test of demand.

For and on behalf of AiVibe Software Services Private Limited

Aravind Jayamohan, Founder & Director (DIN 07977617)

Chennai, 16 October 2026

Source register

Web sources were read on 14 Oct 2026 (IST) unless stated. Labels follow §1.

ID	Publisher, title (date)	URL
S1	Kashmir Life, reporting the MoS MSME's Rajya Sabha reply on Udyam and Udyam Assist registrations as of 31 Jul 2026 (10 Aug 2026)	https://kashmirlife.net/jammu-kashmir-records-over-9-64-lakh-msme-registrations-since-2020-447368/
S2	Germany Trade & Invest (GTAI), India machine-tool market trends, citing IMTMA (19 Jun 2025)	https://www.gtai.de/de/trade/indien/branchen/markttrends--619170
S3	CECIMO press release, citing IMTMA's Director General and CEO (22 Sep 2025)	https://www.cecimo.eu/?p=19787
S4	IBEF, "How machine tool manufacturing is powering India's industrial modernisation" (24 Sep 2026)	https://www.ibef.org/blogs/how-machine-tool-manufacturing-is-powering-india-s-industrial-modernisation
S5	Taiwan Machine Tool & Accessory Builders' Association (TMBA), India machine-tool industry brief, citing IMTMA (29 Jul 2026)	https://www.tmts.tw/storage/tmba/files/2026年8月/20260729_印度工具機產業概況.pdf

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ID	Publisher, title (date)	URL
S6	IMARC Group, India Industrial IoT Market (updated 25 Sep 2026)	https://www.imarcgroup.com/india-industrial-iot-market
S7	P&S Intelligence, India Industrial IoT Market (Dec 2025)	https://www.psmarketresearch.com/market-analysis/india-industrial-iot-market-report
S8	MarketsandMarkets, India Industrial IoT Market (Aug 2026)	https://www.marketsandmarkets.com/Market-Reports/geography/industrial-internet-of-things-market/India
S9	Mordor Intelligence, Industrial Edge Computing Market (updated 11 Sep 2026)	https://www.mordorintelligence.com/industry-reports/industrial-edge-computing-market
S10	MarketsandMarkets, Industrial Edge (21 Feb 2025)	https://www.marketsandmarkets.com/PressReleases/industrial-edge.asp
S11	Grand View Research, Industrial IoT Market (Aug 2026, updated Sep 2026)	https://www.grandviewresearch.com/industry-analysis/industrial-internet-of-things-iiot-market
S12	Precedence Research, Industrial IoT Market (15 Sep 2026)	https://www.precedenceresearch.com/industrial-iot-market
S13	MarketsandMarkets, Machine Condition Monitoring (2024)	https://www.marketsandmarkets.com/PressReleases/machine-health-monitoring.asp
S14	Business Today, "Automation for the road" (Sep/Oct 2020): "About 1,85,000 CNC machines … made by FANUC work on Indian factory shopfloors"	https://businesstoday.in/specials/most-powerful-women-2018/story/automation-for-the-road-273255-2020-09-17
S15	Trendlyne, broker report on Jyoti CNC Automation (26 Jun 2026)	https://trendlyne.com/posts/5707822/

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ID	Publisher, title (date)	URL
S16	The Machine Maker, "Leanworx secures INR 8.3 crore in seed funding led by YourNest Venture Capital" (27 Dec 2024): "India's Industry 4.0 shop-floor monitoring market includes over 12 lakh machines in sectors like metalworking and FMCG"; Leanworx "connected to over 2,000 machines"	https://themachinemaker.com/news/leanworx-secures-inr-8-3-crore-in-seed-funding-led-by-yournest-venture-capital/
S17	Leanworx: pricing, home and Lite pages	https://leanworx.ai/pricing ; https://leanworx.ai/ ; https://leanworx.ai/leanworx-lite/
S18	IndiaMART asking prices: Netra Automation; Brewsight Analytics; Techmetro; HR Technotronics; SYL Technologies; Autobits Labs; SfHawk	https://m.indiamart.com/netra-automation-indore/centralized-data-monitoring-system.html ; https://m.indiamart.com/proddetail/iiot-based-cnc-ma monitoring-cloud-solution-22163901562.html ; https://m.indiamart.com/proddetail/cnc-machine-monitoring-software-23707896612.html ; https://m.indiamart.com/hr-technotronics/cnc-software.html ; https://m.indiamart.com/proddetail/machine-monitoring-system-2853459203473.ht https://m.indiamart.com/autobitslabs ; https://m.indiamart.com/proddetail/machine-monitoring-system-2856708180330.html
S19	Faclon Labs: IoSense and Bruce AI	https://faclon.com/ ; https://faclon.com/product/bruce-ai
S20	Ace Micromatic: auto tool-wear offset correction; AmiT	https://www.acemicromatic.net/industry-4-0-and-smart-manufacturing-iot-solutions/auto-tool-wear-offset-correction-and-automated-spc/ ; https://www.amitpl.com/
S21	iFactory AI: textile shop-floor voice assistant (page dated 13 Jun 2026); pricing	https://ifactoryapp.com/industries/textile-manufacturing/ai-chatbot-textile-shop-floor-voice-assistant ; https://ifactoryapp.com/pricing
S22	MachineMetrics: pricing, shop, hardware guide, Max AI launch (6 Nov 2025), BC Machining case study; Techjockey listing	https://www.machinemetrics.com/pricing ; https://shop.machinemetrics.com/ ; https://docs.machinemetrics.com/docs/getting-started/hardware-bu https://www.machinemetrics.com/blog/machinemetrics-unveils-max-ai-real-time-intelligence-to-power-the-factory-of-the-future ; https://www.machinemetrics.com/bc-machining ; https://www.techjockey.com/ae/detail/machinemetrics
S23	Scytec, pricing	https://www.scytec.com/pricing/
S24	FourJaw, pricing	https://fourjaw.com/pricing
S25	Tulip: pricing, edge devices, multilingual apps (2022), Frontline Copilot (Sep 2023)	https://tulip.co/pricing/ ; https://tulip.co/products/edge-devices/ ; https://tulip.co/blog/introducing-multilingual-apps-in-tulip/ ; https://tulip.co/blog/a frontline-copilot/
S26	FORCAM ENISCO (ENI.one, "Produktionsprozesse per Sprache steuern")	https://www.forcam-enisco.net/
S27	Evocon, pricing	https://evocon.com/pricing/

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ID	Publisher, title (date)	URL
S28	Other global products: Litmus, Amper/ECI, Guidewheel, Mingo, Datanomix, Memex, Siemens Industrial Copilot, Sight Machine, Cognite	https://litmus.io/pricing ; https://resources.amper.xyz/lp-production-monitoring ; https://www.guidewheel.com/pricing ; https://mingosmartfactory.c https://www.datanomix.io/ ; https://memexoee.com/ ; https://www.siemens.com/industrial-copilot ; https://sightmachine.com/ ; https://www.cognite.
S29	Other Indian products, for example ShopWorx, Altizon, Infinite Uptime, FANUC India, Jyoti 7th SENSE, Trinetra, Ripik.ai	https://shopworx.io/ ; https://altizon.com/ ; https://www.infinite-uptime.com/ ; https://www.fanucindia.com/iot ; https://jyoti.co.in/7thsense/ ; https://www.trinetratsense.com/ ; https://www.ripik.ai/
S30	Voice precedents: The Operations Engineer, "Getting vocal" (7 Oct 2019: Mazak 2007, ATHENA 2018); New Equipment Digest on ATHENA (22 Jan 2021); Beckhoff press release on TwinCAT CoAgent (25 Feb 2026)	https://www.operationsengineer.org.uk/content/features/getting-vocal ; https://www.newequipment.com/product-news/promotion/21152984/meet-a first-voice-assistant-for-the-manufacturing-industry ; https://www.beckhoff.com/en-ph/company/press/beckhoff-facilitates-physical-ai-2026-02.h
S31	Gear Technology India, "A practical way to retrofitting legacy grinders" (22 Dec 2025): control retrofit ₹8–20 lakh	https://geartechnologyindia.com/a-practical-way-to-retrofitting-legacy-grinders/
S32	SYMESTIC blog, SaaS MES (updated Mar 2026): on-premise MES "6-18 months"	https://www.symestic.com/en-us/blog/mes/saas-mes
S33	Udyam portal, NIC-2008 code list	https://udyamregistration.gov.in/docs/NIC-code-for-MSME-classification-definition.pdf
S34	PIB (Ministry of Finance), "Recommendations of the 56th Meeting of the GST Council" (3 Sep 2025): rates "with effect from 22nd September 2025"	URL not captured; copy read on 14 Oct 2026
S35	WPC ETA self-declaration route, as printed on issued ETA-SD certificates (O.M. No. ETA-WPC/Policy/2018-19 of 26 Feb 2019); Saral Sanchar portal	https://www.espressif.com/sites/default/files/ESP8684-WROOM-02C%20WPC%20Certification.pdf ; https://saralsanchar.gov.in

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ID	Publisher, title (date)	URL
S36	UL, "Mandatory testing and certification of telecommunication equipment in India" (MTCTE; "IoT gateway" in Phase III; portal open since 11 Oct 2021)	https://ul.com/insights/mandatory-testing-and-certification-telecommunication-equipment-india
S37	BIS CRS scope (MeitY order S.O. 2357(E), 3 Oct 2012, as amended; IT power adapters under IS 13252 Part 1): secondary sources only	https://www.tuvsud.com/en-us/services/product-certification/bis-compulsory-registration-scheme ; https://ewh.ieee.org/r6/ocs/pses/India%20Presentation.pdf
S38	Bank of England database, spot exchange rates for 12 Oct 2026 (series XUDLBK64, XUDLBK97)	https://www.bankofengland.co.uk/boeapps/database/_iadb-fromshowcolumns.asp?csv.x=yes&Datefrom=12/Oct/2026&Dateto=12/Oct/2026&SeriesCodes=XUDLBK97,XUDLBK64,XUDLERS,XUDLUSS&CSVF=CN&UsingCodes=Y&VP

Local evidence (read-only; paths on the company's machine)

ID	What	Where
L1	AJ firmware: board, ports, protocol status, watchdog, identity	company records; firmware/src/config.h (WATCHDOG_MS = 4000); firmware/src/protocol_engine.cpp line 7 (ports)
L2	Platform status note; confirmation design; tenant isolation	company records (line 58 status note; "Security protocol" section)
L3	Approval gate: deny by default; single-use, time-boxed, audited approvals; global write switch off by default	company records
L4	AiCippY app: voice, slide-to-confirm, screen-lock check	company records; src/components/generative/SafeConfirmModal.tsx; src/platform/chatDeviceAuthentication.ts; modules/aicippy-language
L5	Edge translator: 17 device families, FANUC writes and offset read	company records; registry/factory.py; protocols/fanuc/translator.py (lines 611–666 write; 765–782 offset read)
L6	Registry claims	company records line 1071; company records lines 193–203; AiVibe's code base line 593
L7	Registry in code	company records (aifactory_protocol_adapters, 19 rows); AiVibe's code base (23 adapters)
L8	Media and field-evidence review (14 Oct 2026)	AiVibe's working papers§3C, §6
L9	Legal and credentials review (14 Oct 2026), including the company's regulatory-approvals declaration of 01 Aug 2026 (TDIP_5_Regulatory_Approvals_Declaration.pdf p1) and the pilot-host consent letters	AiVibe's working papers§3, §4
L10	Competitor and market evidence: the 43-product scan, quotes, DERIVED costs	AiVibe's working papers

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