



B U S I N E S S P L A N · I N D I A

Drone and UAV Manufacturing

*The specification is true and the conditions never occur, so publish the mission number
and the derating beside it*

AVIATION AND AEROSPACE SERVICES

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This document is confidential and prepared for planning purposes. All financial figures are illustrative model assumptions for an Indian MSME context and must be validated against live quotes, local rates and professional advice before any investment or borrowing decision.

1. Executive Summary

This plan sets out a **Drone and UAV Manufacturing** business — design, assembly and integration of agricultural spray, survey and government-procurement UAVs across **six certified models**, with spares and after-sales, subsystems supplied to other manufacturers, and design and flight-test services. By Year 3 it ships **280 airframes** and sells **₹24.00 crore**, publishing **a mission-condition specification and a derating table for every model**.

This plan is the seventh in vertical 57 and **inherits the ten aviation anchor rules (a)-(j)** set out in §17 of the drone services plan.

Item	Detail	Year 3
What is sold	Agricultural spray UAVs, survey and mapping UAVs, government and surveillance procurement, spares batteries and after-sales, subsystems and integration for other manufacturers, and design, certification and flight-test services	₹24.00cr
Airframes / models / components	120 spray, 120 survey, 40 government; 200 subsystems	280; 6; 34
PAT / net margin	Engineering-heavy, import-heavy, and competing against a datasheet	₹1.73cr / 7.2%
ROCE on ₹9.00cr	Assembly plant, flight-test range, design systems, test rigs	31.2%
Median gap between datasheet endurance and mission endurance	Both figures true; only one describes a flight	51%
Value addition on declared import prices / on reference prices	The scheme sees the first number; the second is the honest one	58% / 41%

☐ **THE SPECIFICATION IS TRUE AND THE CONDITIONS NEVER OCCUR.** Endurance is quoted in still air at sea level and 25°C, with no payload, a new battery and no landing reserve — a set of conditions each individually reasonable to test at, and jointly never present on any mission anybody flies. **A 45-MINUTE DRONE FLIES 22 MINUTES ON A REAL JOB, AND NOBODY HAS LIED ABOUT ANYTHING.**

Which makes the claim unfalsifiable rather than merely optimistic. No regulator, consumer forum or tender evaluator can call it misleading, because the aircraft genuinely does forty-five minutes under the stated conditions. AND EVERY MANUFACTURER QUOTES THE SAME WAY, SO A FIRM PUBLISHING THE ACHIEVABLE NUMBER APPEARS TO HAVE A PRODUCT HALF AS GOOD. THE HONEST NUMBER LOSES THE TENDER TO THE TRUE ONE.

2. Business Description, Vision & Legal Structure

A private limited company designing and building UAVs under DGCA type certification, with its own flight-test range, environmental and endurance rigs, firmware and software team, and an assembly and integration plant.

Element	Position
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Legal form	Private limited company; DGCA type certification per model under the Drone Rules; UIN issuance; CIB&RC pathway for spray systems; import and customs registrations; PLI or state incentive participation where the value-addition test is met on our own reference basis
Where the money is made	Airframes are the volume and the thinnest margin; spares and batteries, subsystems and design services carry disproportionate profit
What is different	Every model ships with a mission-condition specification and a derating table, and every bill of materials is published by component, origin and value
Vision	A manufacturer whose published endurance figure is the one the customer will actually see

Why this shape	Reasoning
Mission-condition specification on every model	The datasheet number is true and useless. Publishing the number at the customer's payload, altitude, temperature, wind and reserve is the only figure that predicts a flight
Bill of materials published by origin and value	Value addition is a ratio whose denominator the applicant declares. Publishing the components and benchmarking them against reference prices is the only way the percentage means anything
Indigenisation only where it survives the reference test	Replacing an imported part with an Indian one that is worse is not manufacturing, it is arithmetic; the programme funds components that pass on function
Design and flight-test services sold outward	The test range and environmental rigs are idle between our own models, and no small manufacturer can build them

3. Promoter & Ownership

Item	Position
Promoter	Aerospace engineer with fifteen years in UAV design; spent four of them writing datasheets he knew described a condition set no customer would ever fly in, because every competitor's said the same
Promoter equity	₹3.24cr of the ₹9.00cr project cost (36%), unsecured and not withdrawable during the loan term
Ownership	Promoter and family 62%; ESOP and key staff 18%; deep-tech investor 20%
Governance	No datasheet, tender response, brochure or demonstration may state an endurance, range or payload figure without the condition set printed beside it at the same size. The incentive claim is computed on third-party reference prices, and the declared-price figure is not used even where it is permitted

The phrase "at the same size" is doing real work. **Every manufacturer in the world prints condition footnotes; they appear in six-point grey type under a forty-five-minute headline, and they are technically a disclosure and functionally decoration. A CONDITION SET IS NOT DISCLOSED IF IT IS SET IN A TYPEFACE DESIGNED TO BE SKIPPED, AND EVERY REGULATOR IN THE WORLD ACCEPTS THAT IT IS.**

4. Market Analysis — India

Segment	What drives it	Position taken
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Agricultural spray UAVs	Labour scarcity, policy push, subsidy schemes and custom-hiring centres; the largest volume segment and the most price-driven	120 units at ₹6.00 lakh
Survey and mapping UAVs	Mining, construction, land records and utilities; buyers who care about accuracy and increasingly about endurance honesty	120 units at ₹4.40 lakh
Government and surveillance procurement	State police, disaster management, forestry and border-adjacent agencies; tendered on written specifications	40 units at ₹10.80 lakh
Spares, batteries and after-sales	Batteries are consumables with a 250–350 cycle life; the annuity of this business	₹3.36cr
Subsystems and design services	Flight controllers, spray systems and integration sold to other manufacturers; test range hired out	200 subsystems; 12 engagements

Where forty-five minutes goes

Condition	Minutes
Datasheet: hover, no payload, sea level, 25°C, still air, new pack, no reserve	45
Less 1.2 kg payload	–9
Less forward flight in 15 km/h wind	–5
Less 400 m elevation at 38°C	–3
Less battery at cycle 180, 82% of new capacity	–4
Less 25% landing reserve	–2
Mission endurance	22

Indian drone manufacturing has grown very fast on genuinely supportive policy — simplified certification, import restrictions on finished drones, production incentives and a large agricultural push. IT IS ALSO A MARKET IN WHICH BUYERS COMPARE DATASHEETS, TENDERS ARE WRITTEN BY COPYING DATASHEETS, AND SIXTY TO SEVENTY PER CENT OF EVERY AIRCRAFT'S VALUE ARRIVES IN A CONTAINER.

5. Competition & Position

Competitor type	What they do well	Where the gap is
Established Indian UAV manufacturers	Real engineering, type certifications, government relationships and genuine production capability	Datasheet-condition specifications throughout; a mission figure exists internally and is never printed
Assemblers and re-badgers	Fast, cheap, and responsive to whatever a tender asks for	Value addition computed on declared import prices; the aircraft is somebody else's with a new label
Imported platforms via integrators	Mature products, deep component ecosystems, proven reliability	Import restrictions on finished drones; support distance; forex on the whole aircraft
Defence and PSU manufacturers	Scale, credibility and privileged procurement access	Slow to the commercial and agricultural segments where most volume is
This manufacturer	Published mission specs, published BOM by origin, reference-price incentive claims	Positioned on a number that loses the paper evaluation and wins the third week

The competitive difficulty is stated exactly by the tender process. A specification demanding "minimum endurance 45 minutes" is met on paper by every competitor and by no aircraft in the field, and our 22-minute mission figure fails technical evaluation before anybody flies anything. WE LOSE TO A NUMBER THAT IS NOT FALSE, IN AN EVALUATION THAT IS NOT CORRUPT, AGAINST A COMPETITOR WHO IS NOT LYING.

6. The Specification Is True and the Conditions Never Occur

This is the finding, and it concerns a number that is accurate, published, compared, and describes nothing anybody will experience.

Datasheet condition	Present on a real mission?
No payload	Never — that is the point of the aircraft
Sea level	Rarely
25°C	Rarely, in India
Still air	Almost never
New battery, no reserve	Once, and never legally

Endurance, range and payload are quoted at a condition set that is standard, disclosed and defensible: hover, no payload, sea level, twenty-five degrees, still air, a new battery discharged to nothing. Each of those is a reasonable thing to test at, and there is no dishonesty in any single one of them. THE DIFFICULTY IS THAT THEY ARE NEVER JOINTLY TRUE — a real spray mission carries 1.2 kg at four hundred metres in thirty-eight degrees with wind and a battery at cycle 180, and lands on a quarter reserve. THE SAME AIRCRAFT DOES FORTY-FIVE MINUTES AND TWENTY-TWO MINUTES, AND BOTH FIGURES ARE CORRECT.

What makes this different from an exaggeration is that it cannot be attacked. An exaggeration is falsifiable; this is not. A regulator, a consumer forum or a tender evaluator asked to rule on a forty-five-minute claim will find that the aircraft achieves forty-five minutes, because it does. THE SPEC IS NOT A CLAIM ABOUT THE PRODUCT. IT IS A CLAIM ABOUT A LABORATORY — and the laboratory exists.

And the market has standardised on it, which closes the loop. Every manufacturer quotes the same way, so a firm publishing twenty-two minutes beside a competitor's forty-five appears to have built an inferior aircraft. Worse, TENDER SPECIFICATIONS ARE WRITTEN BY COPYING DATASHEETS — a state department asking for "minimum endurance 45 minutes" has written a requirement that no drone on earth meets in the field and that every datasheet satisfies. THE PROCUREMENT REQUIREMENT AND THE PRODUCT CLAIM ARE THE SAME SENTENCE, COPIED, AND NEITHER OF THEM DESCRIBES A FLIGHT. THE HONEST NUMBER LOSES TO THE TRUE ONE.

So the mission number is produced, published and quoted. EVERY MODEL IS FLIGHT-TESTED AT THREE CONDITION SETS AND SHIPS WITH A MISSION-CONDITION SPECIFICATION AND A DERATING TABLE, WITH THE RAW LOGS PUBLISHED — 6 of 6 models, at ₹10.00 lakh a model. No figure may appear anywhere without its condition set printed beside it at the same size. The median gap across our range is 51%, which is the honest measure of what the industry's headline numbers are worth. It costs us tenders: 34 in Year 3, worth ₹4.62 crore, disqualified at technical evaluation for stating an achievable figure. And it buys the only thing that

matters afterwards — endurance-shortfall complaints in the first ninety days fell from 41% to 6%, because nobody was surprised. **GENERAL RULE: WHERE A SPECIFICATION IS TRUE AT CONDITIONS THAT NEVER OCCUR, IT CANNOT BE ATTACKED AND MUST BE REPLACED — SO PUBLISH THE MISSION NUMBER AND THE DERATING BESIDE IT.**

7. A Ratio Whose Denominator the Applicant Declares

The second thread concerns the number on which Indian manufacturing incentives actually turn.

Value addition is	Established how?
Total product value	Sale price, observable
Imported component value	Declared by the applicant
Domestic value added	The difference
Who verifies the import price	The invoice, which is also declared
Result	A ratio the applicant can move

Indian production incentives and government procurement preferences turn on value addition — the share of a product's value created domestically. A drone is motors, speed controllers, flight controllers, gimbals, cameras, batteries, airframe, harness and software, and **THE HIGH-VALUE ELECTRONICS ARE OVERWHELMINGLY IMPORTED** while the airframe, integration, assembly and software may genuinely be Indian. Value addition is then computed from declared transfer prices on those imports — **SO A COMPANY IMPORTING A FLIGHT CONTROLLER AT A DECLARED \$180 AND ONE IMPORTING THE IDENTICAL PART AT A DECLARED \$95 REPORT VERY DIFFERENT PERCENTAGES, AND BOTH ARE COMPLIANT.**

The measure is a ratio whose denominator the applicant declares, and the consequence is perverse in a specific way. A firm that genuinely develops an Indian flight controller — expensive, slow, and risky — may score **WORSE** on value addition than one that simply re-declares its import invoice. **THE SCHEME PAYS FOR A NUMBER, AND THE NUMBER IS VASTLY CHEAPER TO MOVE THAN THE THING IT IS MEANT TO MEASURE.** Nobody is defrauding anybody: transfer prices within a permitted range are a matter of legitimate commercial arrangement, and the scheme has to use some figure.

So the bill of materials is published and the incentive is claimed on the harder basis. Every model's BOM is published by component, origin and value across all 34 major components, and value addition is computed twice: on declared import prices, which gives 58%, and on published third-party reference prices for the same parts, which gives 41%. **THE SECOND NUMBER IS THE ONE WE CLAIM ON, AND IT COSTS ₹0.74 CRORE OF INCENTIVE A YEAR THAT WE ARE ENTITLED TO AND DO NOT TAKE.** Indigenisation is funded only where a component passes on function rather than on arithmetic: 11 of 34 components are now genuinely designed and manufactured in India, up from 4.

8. Operations Plan (design, test, derate, publish, build)

- **Design.** Airframe, power and payload sized to a stated mission profile rather than to a hover figure; margin held for the conditions the derating table will have to show.

- **Test.** Every model flown at three condition sets — datasheet, typical mission and worst reasonable case — on the test range and environmental rigs, with raw logs retained.
- **Derate.** A published table giving endurance against payload, density altitude, wind and battery cycle, so a customer can compute his own case rather than accept ours.
- **Publish.** No endurance, range or payload figure appears anywhere without its condition set at the same size; the bill of materials is published by component, origin and value.
- **Build.** Assembly and integration to the certified configuration, with component origin verified against the published BOM at goods inward.

Step	What is recorded	Why
Flight test	Three condition sets, raw logs published	6 models; ₹10.00 lakh each
Derating table	Endurance vs payload, altitude, wind, cycle	Median gap 51%
Tender response	Mission figure quoted, condition set attached	34 disqualified; ₹4.62cr
BOM	34 components by origin and value	₹18,627 per component-model record
Incentive claim	Reference-price basis, not declared	41% not 58%; ₹0.74cr forgone

The operational hinge is a state agriculture department tender for sixty spray drones whose specification reads "minimum endurance 45 minutes". No spray drone anywhere achieves forty-five minutes carrying spray; the requirement was copied from a datasheet. We quote twenty-two minutes at ten litres, four hundred metres, thirty-eight degrees and fifteen kilometres an hour of wind, with the derating table attached, and are disqualified at technical evaluation for not meeting the specification. ₹3.60 crore of order value, gone before anything flew. The winning bidder quotes forty-five, supplies an aircraft that flies twenty, and the department's field officers discover it in the third week — by which time the tender is closed, the aircraft are delivered, and the specification has been satisfied on paper by a number that was true. AND WE CANNOT COMPLAIN, BECAUSE THE WINNING NUMBER IS NOT FALSE.

9. Type Certification, Incentives & Import Compliance (India)

Area	Requirement
Type certification	DGCA type certification per model under the Drone Rules, against the certification scheme's own test standards, plus UIN issuance for each airframe. Under anchor rule (b) the certificate is the asset and it is granted per model — so the fixed cost of certification falls on whatever volume that single model achieves
Spray systems	CIB&RC standard operating procedures and drone-application pathways where the aircraft is sold as a spray platform; the aircraft and the application approval are separate questions
Specification and advertising	Consumer Protection Act on misleading advertisement — but a condition-qualified performance figure that is achievable at those conditions is not a misleading claim, which is the entire subject of §6
Incentives and procurement preference	Production-linked and state incentives and public-procurement preference turn on value addition and on local-content declarations, computed from applicant-declared import values
Imports and customs	Import of components and restrictions on finished drones; customs classification, duty and IGST; under anchor rule (h) 60–70% of this aircraft is dollar-priced and a rupee move is a cost event

Quality and safety	Battery transport and storage, lithium handling, EMI and environmental testing; product liability under rule (d)
Labour and tax	Factories Act, EPF, ESI, Minimum Wages; GST on goods and on design and test services at differing treatment

What the framework reaches	What it does not
That an aircraft meets its certified specification	Whether the specification describes a mission
False statements in advertising	True statements at conditions nobody flies in
Local-content declarations	The import price the declaration divides by
Component conformity and safety	Whether a tender specification is achievable by anything

The Indian drone framework does its job: it certifies aircraft, controls airspace, restricts finished-drone imports and funds domestic capability. NEITHER OF THIS PLAN'S TWO PROBLEMS IS A REGULATORY FAILURE. One is a true statement that misleads and cannot be prohibited without prohibiting truth; the other is a subsidy formula that must use some import value and has no independent one available. Both are cases where the rule is correct and the arithmetic underneath it is soft.

10. Organisation & Manpower Plan

Function	Yr 1	Yr 3	Note
Managing director	1	1	Cannot approve a bare figure
Design and systems engineering	17	26	Six models; sized to a mission profile
Sales, tendering and customer support	10	16	34 disqualified tenders to argue
Software and firmware	10	15	Genuinely Indian value
Flight test, validation and mission-condition testing	8	14	Three condition sets per model
After-sales service and spares	7	12	Battery cycle life is the annuity
Assembly and integration technicians	7	11	Derived: 19,160 build-hours ÷ 1,760 per person-year = 10.9
Quality, certification and compliance	6	9	Six type certificates
Supply chain, BOM costing and origin verification	5	8	34 components, two price bases
Finance, admin and HR	5	8	—
Total	76	120	280 airframes; 6 models; 34 components

The shape of this table is itself the argument. Eleven people assemble the aircraft and fifty-five design, test and program it — ASSEMBLY IS NOT WHERE A DRONE'S VALUE IS MADE, WHICH IS EXACTLY WHY A VALUE-ADDITION PERCENTAGE COMPUTED FROM AN ASSEMBLY LOCATION MEASURES ALMOST NOTHING. The 8 people

in supply chain and origin verification cost **₹0.22 crore of salary — ₹2.75 lakh average CTC across 8** — with **₹0.16 crore** for reference-price data and publication.

11. Implementation Timeline & Milestones

Phase	Months	Milestone
Design and finance	0-12	First two model designs, term loan, plant lease, component sourcing
Flight-test range and rigs before first certification	4-14	Environmental and endurance rigs live BEFORE the first type certificate, so the mission figure exists from model one
Type certification	10-24	Six models certified across spray, survey and government families
Assembly plant and quality system	8-20	Clean assembly area, jigs, goods-inward origin verification
BOM publication and reference-price basis	12-20	Published before the first incentive claim, so the claim has never been made on the other basis
Subsystems and design services	22-34	Subsystems to other manufacturers; test range hired out

Milestone that must not slip	Why
Test rigs before the first certificate	A model certified without mission-condition data has a datasheet number and nothing else, and retro-fitting the honest figure to a product already sold is a recall conversation rather than a specification
Reference basis before the first claim	A firm that has once claimed on declared prices has established a baseline it must then explain reducing, which looks like an admission rather than a standard
Condition-set typography from the first brochure	The six-point footnote is the industry default and it creeps back the moment a designer is left alone with a headline number
Origin verification at goods inward	A published BOM that is not verified against what actually arrives is a marketing document, and it is the one document a competitor will check

12. Financial Plan (Illustrative)

All figures are illustrative model assumptions in Indian rupees, not forecasts or guarantees. Drivers are shown so every number can be changed.

12.1 Revenue build (₹ lakh)

Stream	Yr 1	Yr 2	Yr 3	Share	GM
Agricultural spray UAVs	390	540	720	30.0%	32.0%
Survey and mapping UAVs	286	396	528	22.0%	40.0%
Government and surveillance procurement	234	324	432	18.0%	38.0%
Spares, batteries and after-sales	182	252	336	14.0%	52.0%
Subsystems and integration for other manufacturers	130	180	240	10.0%	44.0%

Design, certification support and flight-test services	78	108	144	6.0%	62.0%
Total	1,300	1,800	2,400	100%	40.6%

Spares and batteries at 14% of revenue and a 52% margin are the annuity, and they exist because batteries are consumables with a 250 to 350 cycle life. IT IS ALSO THE LINE MOST DAMAGED BY DATASHEET ENDURANCE CLAIMS: a customer who expected 45 minutes and gets 22 blames the battery, replaces it early, and concludes the aircraft was mis-sold — WHICH IT WAS, BY A TRUE NUMBER.

12.2 What is committed, and what it is measured on

Commitment	Yr 1	Yr 3
Models published with a mission-condition specification and derating table	nil	100%, 6 of 6
Median gap between datasheet endurance and mission endurance	not measured	51%
Tenders quoted on the mission figure and disqualified on a datasheet requirement	nil	34, ₹4.62cr
Customer-reported endurance shortfall in the first 90 days	41%	6%
Value addition on declared import prices / on third-party reference prices	58% only	58% / 41%
Components genuinely Indian by function / incentive claimed on the reference basis	4 of 34	11 of 34 / 100%

Row four is the payoff and it is the only one a customer ever notices. Endurance-shortfall complaints fell from 41% of deliveries to 6% — and not one aircraft got better. THE COMPLAINT RATE COLLAPSED BECAUSE NOBODY WAS SURPRISED, WHICH IS THE ENTIRE DIFFERENCE BETWEEN A PRODUCT PROBLEM AND AN EXPECTATION PROBLEM.

12.3 Profit & loss (₹ lakh)

Line	Yr 1	Yr 2	Yr 3
Revenue	1,300	1,800	2,400
Cost of goods (components, batteries, airframe, assembly labour, freight and duty)	(772)	(1,068)	(1,425)
Gross profit	528	732	975
Indigenisation programme on components passing the reference test	(40)	(56)	(72)
Mission-condition flight testing, derating tables and log publication	(34)	(46)	(60)
BOM publication, reference-price benchmarking and origin verification	(22)	(30)	(38)
Research, prototyping and certification	(76)	(102)	(130)
Sales, tendering and marketing	(62)	(84)	(106)
Plant, tooling and assembly operations	(54)	(74)	(94)
Administration and overhead	(44)	(60)	(76)
EBITDA	196	280	399
Depreciation and amortisation	(90)	(104)	(118)

Finance cost	(56)	(64)	(72)
Other income (test range hire, scrap, misc)	12	16	22
PBT	62	128	231
Tax (fully taxable business income, ~25%)	(16)	(32)	(58)
PAT	46	96	173
Net margin	3.5%	5.3%	7.2%
ROCE on ₹9.00cr	11.8%	19.6%	31.2%

12.4 Project cost & funding (₹ lakh)

Use of funds	₹L	%	Source of funds	₹L
Assembly plant, clean assembly area, jigs and tooling	270	30%	Promoter equity	324
Flight-test range, telemetry, environmental and endurance rigs	189	21%	Term loan	360
Design, simulation and firmware development systems	144	16%	Working capital limit	126
Component inventory and test stock	108	12%	Scheme, PLI and subsidy support	90
Certification and type-approval programme	90	10%	—	—
Service centre, spares depot and training facility	63	7%	—	—
Working capital margin and pre-operative	36	4%	—	—
Total	900	100%	Total	900

12.5 Sensitivities (₹ crore PAT, Year 3)

Scenario	What changes	PAT
Base case as planned	As above	₹1.73cr
Trade-standard practice instead	Quote the datasheet figure and win the 34 tenders (+₹4.62cr revenue, +₹1.76cr), claim the incentive on declared prices (+₹0.74cr), win 18% more commercial volume on datasheet marketing (+₹2.25cr revenue, +₹0.79cr), fit cheaper components with no reference discipline (+₹0.62cr), thinner engineering and more re-badging (+₹0.44cr), no test-range running cost (+₹0.34cr), close the testing, BOM and indigenisation programmes (+₹1.70cr) — but carry the warranty and returns that follow (−₹0.58cr), and lose half the design-services line (−₹0.72cr revenue) and 30% of subsystems (−₹0.72cr): revenue ₹29.43cr at 50.3% gross margin	₹6.10cr
Import cost and the rupee +22%	₹2.94cr and a ₹0.47cr loss. Under anchor rule (h), 60-70% of this aircraft arrives in a container and a rupee move is a cost event rather than a market one	(₹0.47cr)
Government procurement or scheme change	Government line down 50% and the incentive lapses: ₹2.42cr	(₹0.08cr)

Component price competition compressing airframe prices 15%	₹1.29cr including volume; the segment competes with imported subassemblies	₹0.77cr
Type-certification failure or recall on one model	₹1.86cr; under rule (b) a certificate is per model, so the fixed cost and the risk both sit on one product	₹0.34cr

The trade-standard row is ₹6.10 crore against ₹1.73 crore, and the two largest components are the two findings. ₹1.76 crore comes from quoting a number that is true, and ₹0.74 crore from dividing by a number we are entitled to choose. NEITHER REQUIRES A FALSE STATEMENT, A BREACH OR A CONCEALMENT — AND TOGETHER THEY ARE MORE THAN THIS BUSINESS'S ENTIRE ANNUAL PROFIT.

12.6 Volumes and unit economics (Year 3)

Physical driver	Volume	Realisation	Revenue
Agricultural spray UAVs	120	₹6.00L	₹720L
Survey and mapping UAVs	120	₹4.40L	₹528L
Government and surveillance UAVs	40	₹10.80L	₹432L
Subsystems to other manufacturers	200	₹1.20L	₹240L
Design and certification engagements / spares	12	₹12.00L	₹480L
Total airframes shipped	280	6 models	₹2,400L

Derived figure	Working	Result
Build hours	280 airframes × 62 hours + 200 subsystems × 9 hours	19,160
Assembly technicians	19,160 ÷ 1,760 productive hours per person-year	10.9, staffed at 11
Flight-test cost per model / per airframe	₹0.60cr over 6 models; over 280 airframes	₹10.00 lakh; ₹21,429
BOM verification per component-model record	₹0.38cr over 34 components × 6 models	₹18,627
Endurance, datasheet to mission	45 min less 9, 5, 3, 4 and 2 for payload, wind, altitude, cycle and reserve	22 min, a 51% gap
Incentive forgone	Claiming on 41% reference rather than 58% declared	₹0.74cr

₹21,429 an airframe is what it costs to know what the aircraft actually does, on a machine selling for ₹6.00 lakh — three and a half per cent. Every manufacturer in India owns the rigs or could hire ours, and the data would take a fortnight per model. THE REASON THE NUMBER IS NOT PUBLISHED IS NOT THAT IT IS EXPENSIVE OR DIFFICULT. IT IS THAT PUBLISHING IT WOULD DISQUALIFY THE AIRCRAFT FROM TENDERS WRITTEN OUT OF EVERYBODY ELSE'S DATASHEET.

13. Funding Requirement & Bankability

Item	Position
Requirement	₹9.00cr: ₹3.24cr promoter equity, ₹3.60cr term loan, ₹1.26cr working capital limit, ₹0.90cr scheme and PLI support
Security	Plant, tooling, test rigs and design systems; hypothecation of inventory and receivables; personal guarantee of the promoter
Debt service	Year 3 EBITDA ₹3.99cr against interest ₹0.72cr and scheduled repayment; DSCR above 2.2x from Year 3
Certification cost is per model and volume is per model	Under rule (b) a type certificate covers one model, so its fixed cost falls on that model's volume alone. This is the structural pressure toward a single general-purpose airframe that is optimal for nothing, and it is resisted here at a real cost in certification spend
Import working capital	60–70% of the bill of materials is imported with lead times and duty paid before revenue; the limit is sized for a container cycle rather than a sales cycle
What a lender should test	Not the order book — the tender disqualification count and the reference-basis value addition. The first says whether the specification discipline is holding, and the second is the only number in the file that cannot be improved by declaring something different

Year	EBITDA	Interest	Repayment	DSCR
Year 1	₹1.96cr	₹0.56cr	Moratorium	—
Year 2	₹2.80cr	₹0.64cr	₹0.68cr	2.12x
Year 3	₹3.99cr	₹0.72cr	₹1.04cr	2.27x

14. Risk Analysis & Mitigation

Risk	Impact	Mitigation
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The specification is true and the conditions never occur	Endurance is quoted at hover, no payload, sea level, 25°C, still air, new battery, no reserve — each individually reasonable and jointly never present. A real spray mission carries 1.2 kg at 400 m in 38°C with wind and a battery at cycle 180, landing on a quarter reserve: the same aircraft does 45 minutes and 22 minutes and BOTH FIGURES ARE CORRECT. It cannot be attacked, because it is not false — a regulator asked to rule will find the aircraft achieves 45 minutes, because it does. THE SPEC IS NOT A CLAIM ABOUT THE PRODUCT, IT IS A CLAIM ABOUT A LABORATORY, AND THE LABORATORY EXISTS. And the market has standardised on it: TENDER SPECIFICATIONS ARE WRITTEN BY COPYING DATASHEETS, so a department asking for "minimum endurance 45 minutes" has written a requirement no drone meets in the field and every datasheet satisfies. THE HONEST NUMBER LOSES TO THE TRUE ONE	PRODUCE THE MISSION NUMBER AND PUBLISH THE DERATING BESIDE IT. Every model flight-tested at three condition sets, shipping with a mission-condition specification, a derating table against payload, density altitude, wind and battery cycle, and the raw logs published — 6 of 6 models at ₹10.00 lakh each, ₹21,429 an airframe. NO FIGURE APPEARS ANYWHERE WITHOUT ITS CONDITION SET AT THE SAME SIZE, because a footnote in six-point grey is a disclosure in law and decoration in fact. Median gap 51%. It costs 34 tenders and ₹4.62cr a year in technical disqualification for stating an achievable figure — and it bought the only thing that matters afterwards: ENDURANCE-SHORTFALL COMPLAINTS FELL FROM 41% TO 6% WITHOUT ONE AIRCRAFT GETTING BETTER. GENERAL RULE: WHERE A SPECIFICATION IS TRUE AT CONDITIONS THAT NEVER OCCUR, IT CANNOT BE ATTACKED AND MUST BE REPLACED
A ratio whose denominator the applicant declares	Incentives and procurement preference turn on value addition, and the high-value electronics are overwhelmingly imported while airframe, integration and software may genuinely be Indian. Value addition is computed from declared transfer prices, so a firm importing a flight controller at a declared \$180 and one importing the identical part at a declared \$95 report very different percentages and both are compliant. The consequence is perverse: a firm that genuinely develops an Indian flight controller may score WORSE than one that re-declares its invoice. THE SCHEME PAYS FOR A NUMBER, AND THE NUMBER IS VASTLY CHEAPER TO MOVE THAN THE THING IT MEASURES — and nobody is defrauding anybody, since the scheme must use some figure	Publish the bill of materials by component, origin and value across all 34 major components, and compute value addition TWICE: 58% on declared import prices and 41% on published third-party reference prices for the same parts. THE SECOND IS THE ONE WE CLAIM ON, AT A COST OF ₹0.74cr OF INCENTIVE A YEAR WE ARE ENTITLED TO AND DO NOT TAKE. Indigenisation funded only where a component passes on FUNCTION rather than on arithmetic: 11 of 34 now genuinely designed and made in India, up from 4. Origin verified at goods inward against the published BOM, because an unverified published BOM is a marketing document
Import cost and the rupee	60-70% of the aircraft arrives in a container; +22% is ₹2.94cr and a ₹0.47cr loss. Under rule (h) this is a cost event, not a market one	Component inventory bought in tranches against a rupee view; dual sourcing on the highest-value imports; indigenisation programme targeted at the largest dollar line items first; price-variation clauses on government contracts where accepted
Government procurement and scheme change	The government line is 18% of revenue and the incentive is policy-dependent; a change is ₹2.42cr	Commercial spray and survey at 52% of revenue are not policy-dependent; subsystems and design services sell to other manufacturers; the reference-basis claim is deliberately conservative so a scheme revision does not create a clawback

Certification and recall	Under rule (b) a type certificate is per model, so both the fixed cost and the failure risk sit on a single product: ₹1.86cr	Six models rather than one, so no single certificate carries the business; conservative design margins because the derating table has to be publishable; flight-test data retained as the evidence base for any investigation
Component price competition	Imported subassemblies compress airframe prices; 15% is ₹1.29cr	Spares and batteries at 52% margin are the annuity and are less price-exposed; subsystems and design services are sold on capability rather than unit price; the published BOM is itself a differentiator with buyers who care about origin
Tender qualification structure	Specifications copied from datasheets will keep disqualifying an honest bidder until a buyer somewhere writes a mission-condition requirement	Derating tables supplied to procuring departments as a drafting aid; disqualifications logged and raised with buyers after award; commercial and custom-hiring segments approached directly, where the operator flies the aircraft himself and finds out in a week

15. SWOT Analysis

Strengths	Weaknesses
The only published mission-condition specifications and derating tables in the market; a 6% complaint rate against a 41% starting point; a published BOM and a reference-basis incentive claim; six certified models; test rigs saleable as a service	7.2% net margin; the commitment costs ₹4.20cr against ₹1.73cr of PAT; the mission figure fails paper evaluations; 60–70% import exposure; certification cost falls per model on small volumes
Opportunities	Threats
Custom-hiring operators fly the aircraft themselves and discover the truth in a week; procuring departments increasingly ask for field-verified figures; derating tables are becoming a drafting aid for tenders; subsystems and test services scale without airframes	Datasheet-written tenders; the rupee; policy change; component price competition; and the structural fact that our central claim is a smaller number than everybody else's and equally true

The honest summary is that this manufacturer competes by publishing a worse number that is more accurate, in a market whose evaluation mechanism cannot tell the difference. It is paid for by the spares annuity, by subsystems and design services, and by repeat buyers who found out in the third week what the aircraft actually does. THE BET IS THAT A PROCURING DEPARTMENT WHICH HAS ONCE BOUGHT SIXTY DRONES ON A FORTY-FIVE-MINUTE SPECIFICATION AND WATCHED THEM LAND AT TWENTY WILL WRITE ITS NEXT TENDER DIFFERENTLY — AND SOME OF THEM ALREADY HAVE.

16. Recommended AiSevak Tools for This Business

- **Business plan and project report generator** — for a term loan on plant, test rigs and a certification programme.
- **Compliance calendar** — type certificates per model, UIN issuance, CIB&RC pathways for spray platforms, import registrations, EPF, ESI and GST, remembering rule (a) that these expire independently.
- **Cost and pricing calculator** — bill of materials by origin and value on two price bases, cost per airframe, and certification cost amortised over a model's realistic volume.
- **GST and invoicing helper** — goods versus design-service treatment, imported component duty and IGST, and government contract billing.

- **Labour and payroll toolkit** — assembly and engineering headcount, Factories Act compliance, EPF and ESI.
- **Loan and subsidy application helper** — PLI and state incentive applications with a defensible value-addition computation, and a working capital limit sized to a container cycle.
- **Contract and terms drafting helper** — the mission-specification warranty, derating-table disclosure terms, subsystem supply agreements, and government contract price-variation clauses.

Every tool above is **free to use on AiSevak and needs no signup to explore**. The toolkit link at the end of this plan opens the whole aviation set.

17. Key Assumptions & Notes

- **All financials are illustrative model assumptions, not forecasts, projections or guarantees.** Revenue, unit volumes, prices, endurance figures, value-addition percentages and disqualification counts are editable inputs; outcomes depend on procurement policy, the rupee, component prices and certification. Figures are in Indian rupees. **This plan is the seventh in vertical 57 and inherits the ten aviation anchor rules (a)-(j) from §17 of the drone services plan — in particular (b) the type certificate is the asset and is granted PER MODEL, so its fixed cost falls on one model's volume; (c) certification and currency obligations are recurring opex; (d) product liability is priced on the manufacturer's own record; and (h) 60-70% of this aircraft is dollar-priced, so a rupee move is a cost event rather than a market one.**
- **The central finding is that the specification is true and the conditions never occur.** Endurance is quoted at hover, no payload, sea level, 25°C, still air, a new battery and no reserve — **each individually reasonable to test at, and jointly never present on any mission anybody flies**. A real spray mission gives 22 minutes against a datasheet 45, **and both figures are correct**.
- **Which makes it unfalsifiable rather than merely optimistic.** A regulator or tender evaluator asked to rule will find the aircraft achieves 45 minutes, because it does. **The spec is not a claim about the product, it is a claim about a laboratory — and the laboratory exists.**
- **And the market has standardised on it, which closes the loop.** Every manufacturer quotes the same way, so publishing 22 beside a competitor's 45 looks like an inferior aircraft; and **tender specifications are written by copying datasheets, so "minimum endurance 45 minutes" is a requirement no drone meets in the field and every datasheet satisfies. The procurement requirement and the product claim are the same sentence, copied, and neither describes a flight. GENERAL RULE: WHERE A SPECIFICATION IS TRUE AT CONDITIONS THAT NEVER OCCUR, IT CANNOT BE ATTACKED AND MUST BE REPLACED — SO PUBLISH THE MISSION NUMBER AND THE DERATING BESIDE IT.**
- **The remedy costs tenders and buys silence.** Six of six models published with mission specifications and derating tables at ₹10.00 lakh a model; no figure printed without its condition set at the same size; a median 51% gap; 34 tenders and ₹4.62 crore lost to technical disqualification. **And endurance-shortfall complaints fell from 41% of deliveries to 6% without a single aircraft getting better — the complaint rate collapsed because nobody was surprised.**
- **The second thread is that value addition is a ratio whose denominator the applicant declares.** The high-value electronics are imported and the percentage is computed from declared transfer prices, **so two firms importing the identical flight controller at declared \$180 and \$95 report very different figures and both are compliant — and a firm that genuinely develops an Indian controller may score worse than one that re-declares its invoice. The scheme pays for a number, and the number is cheaper to move than the thing it measures.** Remedy: publish the BOM across all 34 components by origin and value, compute value addition on both bases — **58% declared, 41% reference — and claim on the reference figure, forgoing ₹0.74 crore of incentive a year.**

Indigenisation funded only where a component passes on function: 11 of 34, up from 4.

- **Volumes and unit economics.** 120 spray UAVs at ₹6.00 lakh, 120 survey at ₹4.40 lakh, 40 government at ₹10.80 lakh, 200 subsystems at ₹1.20 lakh, 12 design engagements at ₹12.00 lakh; 280 airframes across 6 models. Assembly headcount is derived, not chosen: $19,160 \text{ build-hours} \div 1,760 \text{ productive hours} = 10.9$. Flight test costs ₹10.00 lakh a model and ₹21,429 an airframe; BOM verification ₹18,627 per component-model record. **Eleven people assemble the aircraft and fifty-five design, test and program it — assembly is not where a drone's value is made, which is exactly why a value-addition percentage computed from an assembly location measures almost nothing.**
- **Compliance and professional advice.** DGCA type certification per model under the Drone Rules with UIN issuance per airframe — **under rule (b) the certificate is the asset and is granted per model, which is the structural pressure toward one general-purpose airframe optimal for nothing**; CIB&RC standard operating procedures and drone-application pathways where the aircraft is sold as a spray platform; Consumer Protection Act provisions on misleading advertisement, **noting that a condition-qualified figure achievable at those conditions is not a misleading claim, which is the entire subject of this plan**; production-linked and state incentives and public-procurement preference turning on value addition computed from **applicant-declared import values**; component import registrations, restrictions on finished drones, customs classification, duty and IGST under rule (h); lithium battery transport, storage and handling, EMI and environmental testing, and product liability under rule (d); Factories Act, EPF, ESI, Minimum Wages and GST. **Note the structural point: neither problem in this plan is a regulatory failure — one is a true statement that misleads and cannot be prohibited without prohibiting truth, and the other is a subsidy formula that must use some import value and has no independent one available.** Professional advice should be taken on specification and warranty wording, value-addition computation and incentive claim basis, customs valuation, and product liability cover.

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