



# **PUNHA — India's Bravest Deserve India's Best Technology.**

**India's First AI-Powered Custom Bionic Arm**

100% Made in India | Custom Built for Every Amputation | 5 Years of Complete Service

A startup from Ideapad, ITM University Gwalior

**For the first time, Indian technology can give every amputee soldier a fully functional, custom-built arm — at a fraction of current costs.**

**5.5M**

**Traumatic Amputations**

Annual occurrence in India — highest amputation burden of any country

**₹50L**

**Imported Arm Cost**

Current price of functional bionic arms from Western manufacturers

**1 in 10**

**Access Reality**

Only 1 in 10 people who need prosthetics actually receive one

Our soldiers, our veterans, and our civilians all face this reality. The prosthetics available today fall into two categories: cosmetic arms that serve appearance needs, and functional bionic arms that are imported, expensive, and built for foreign bodies. What has been missing is an Indian-made intelligent arm that bridges both — functional, affordable, and built for Indian soldiers.

 **The need is clear. The soldiers are ready. Indian technology has now made a better answer possible.**

# Imported arms were never designed with the Indian soldier in mind.

## What Imported Arms Offer

- Functional movement capability
- Multi-grip patterns available
- EMG sensor technology

## Limitations for Indian Soldiers

- Designed for Western body dimensions — not Indian profiles
- 2 to 4 EMG channels — reduced accuracy on Indian muscle structures
- No customization for amputation level or duty requirements
- Service center abroad — 2 to 3 months repair time
- ₹12 lakh to ₹50 lakh per arm — significant foreign exchange spend

☐ **For the price of one imported arm at ₹50 lakh — PUNHA can equip 12 soldiers. Same budget. Twelve times the reach. Zero foreign dependency.**



# PUNHA reads the signal the brain is already sending — and gives the hand a way to act on it.



## Capture

8-channel EMG sensor array reads electrical signals (0-500 $\mu$ V) from residual limb muscles at 1000Hz sampling rate.



## Understand

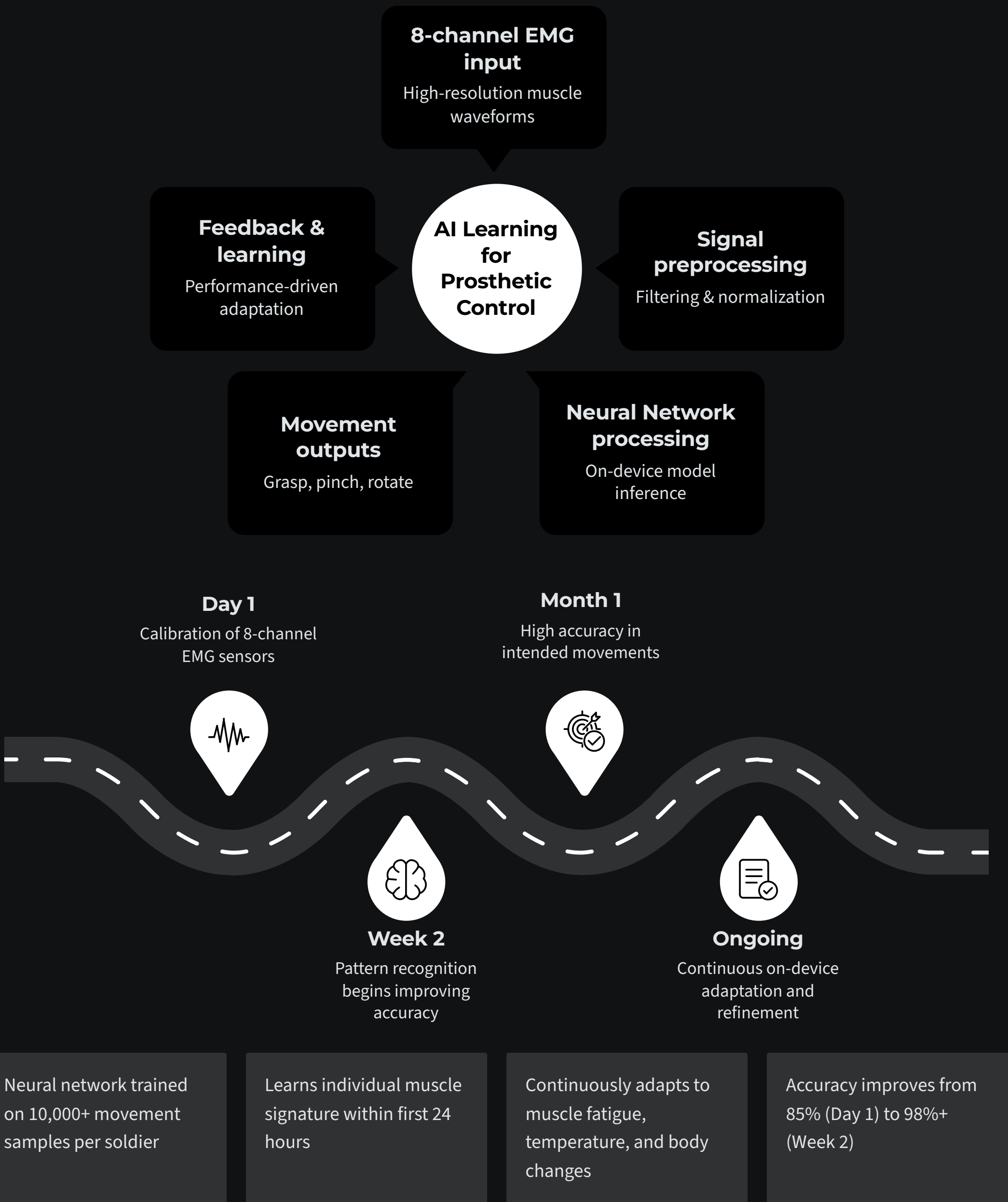
On-device AI processes signals in real-time using trained neural networks. Identifies 12+ distinct movement intentions with 95%+ accuracy. Zero latency — no cloud dependency.



## Move

Bionic actuators execute movement within 100ms. Adaptive grip force (0-50N) adjusts automatically based on object feedback.

## How PUNHA's AI Learns and Adapts



## Key Technology Facts

- 8 channels  $\times$  1000Hz sampling = 8000 data points/second — 4x signal fidelity vs imported arms
- On-device AI inference — <50ms latency, zero cloud dependency, all biometric data processed locally
- 3D printed titanium-grade components — custom manufactured per soldier's limb geometry
- Modular architecture — 47 individually replaceable components, field-serviceable in <2 hours

## Patent Status

Technology entirely Indian-owned. Patent filed and pending.

**The brain never stopped sending the command. PUNHA makes sure the hand receives it.**



# Every soldier's injury is different. Every PUNHA arm is built for that specific soldier.



## Shoulder Amputation

Complete system — shoulder joint, AI-controlled elbow, wrist, and hand. Full reach and grip capability restored.



## Above Elbow

AI-controlled elbow joint integrated with full bionic hand. Natural lifting, reaching, and holding restored.



## Below Elbow

Precision wrist and hand unit. Soldier's own elbow provides movement. PUNHA delivers grip and dexterity.



## Wrist Level

Compact intelligent hand unit. Maximum muscle signal — highest accuracy and most natural response.



**The Army does not issue one uniform size to every soldier. PUNHA does not issue one arm size either.**

# We build the AI enabled arm for what the soldier wants to do next — not just for the injury they carry.



## Officer Holding Hands Again

Restored hand function allowing her to hold her daughter's hand again and return to everyday duties.



## Shop Owner

Restoring hand function to manage daily shop activities and serve customers confidently.



## Independent Driving

Steering grip for vehicle control and independent transportation — mobility restored.



## Agricultural Work

Power grip for farming tools and field work — contribution to household restored.

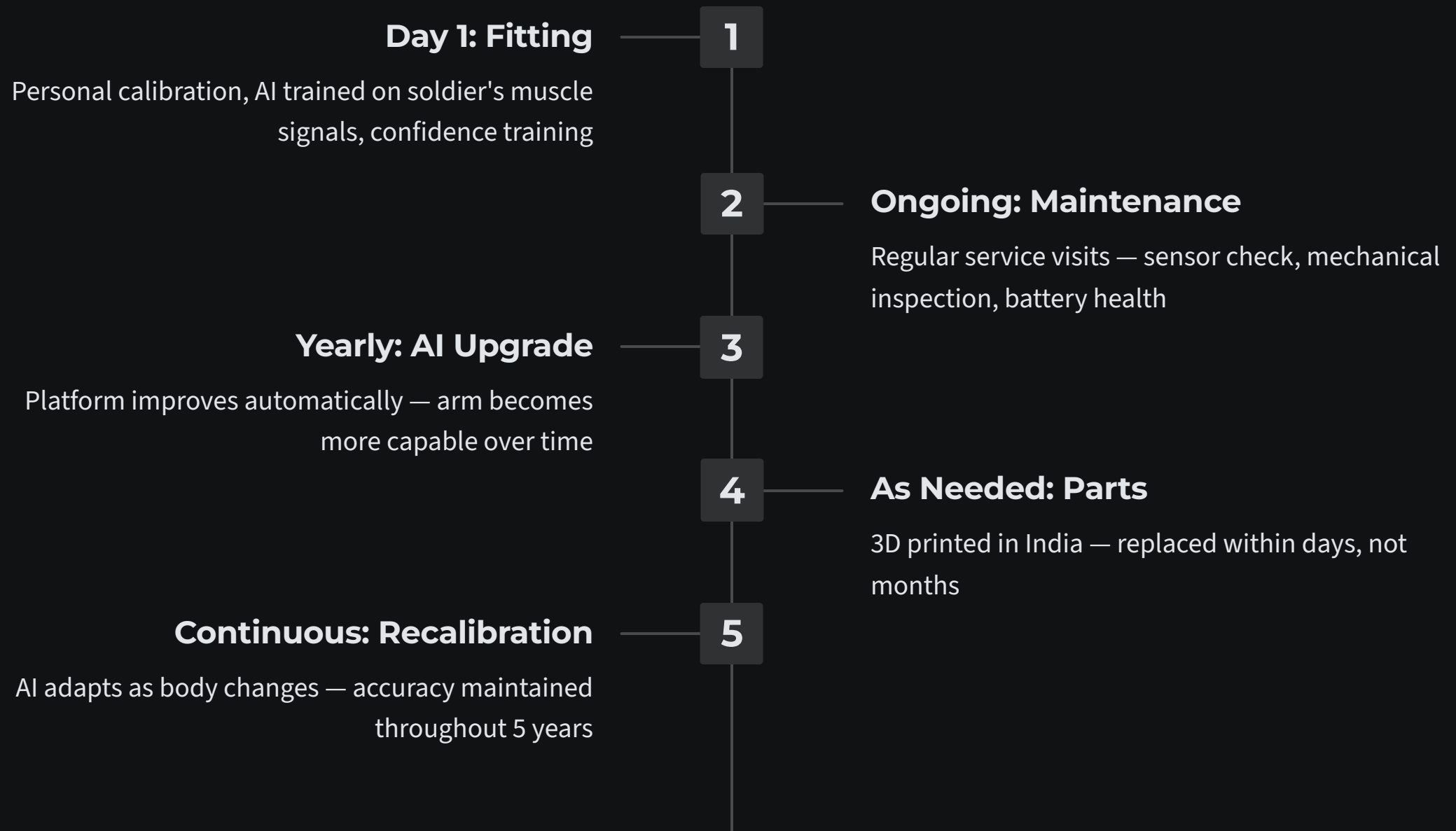


## Teaching Role

Precision grip for chalk, markers, and classroom use — mentorship role continued.

□ Every soldier has a life they want to return to. PUNHA is built around what that life requires.

# We do not deliver the arm and step back. We stay with every soldier for 5 complete years.



📄 **A soldier who trusted India with their service deserves a service that trusts them back. For 5 complete years.**

# Every component engineered in India. Every rupee stays in India. Zero foreign dependency.



## Hardware is Ours

8-channel EMG sensor engineered entirely in-house. Patent filed and owned by PUNHA. Specifically designed for Indian muscle profiles, skin conditions, limb dimensions.



## Software is Ours

AI platform built by Indian engineering team. On-device processing — works without internet. All biometric data stays in India — processed on device — never sent abroad.



## Manufacturing is Ours

3D printing facility operational today in India. Every arm manufactured locally. 20 units per month current capacity — scaling to 100 units per month. Complete supply chain independence.

📄 **When India builds it — India owns it. PUNHA is Make in India in the most meaningful sense — technology that serves the people who served India.**

# Same budget. Twelve times the soldiers served. Superior technology. Complete service.

Feature	Cosmetic Arm	Imported Bionic	PUNHA
Functional movement	No	Yes	Yes
EMG Channels	None	2 to 4	8
Custom per amputation	No	No	Yes
AI that learns soldier	No	No	Yes
Service in India	None	No — abroad	Yes
Repair time	N/A	2 to 3 months	Days in India
Data stays in India	N/A	No	Yes
Price	₹5K – ₹30K	₹12L – ₹50L	₹4 Lakh
Service period	None	None	5 Years

## ₹50L

**Imported Cost**

5 soldier served

## ₹48L

**PUNHA Cost**

12 soldiers served with 5 years complete service

📄 **The question is not whether India can afford PUNHA. The question is whether India can afford not to.**

# PUNHA is ready to serve India's Army. We are asking for the opportunity to begin.

01

## Pilot Programme

20 to 50 arms deployed. Every arm custom fitted for each soldier's specific amputation level and life requirements. Full 5 year service commitment from day one.

02

## Programme Integration

PUNHA integrated into Army rehabilitation and prosthetics welfare programme. Domestic supply replacing import dependency. Full Make in India compliance.

03

## National Scale

100 units per month manufacturing capacity within 18 months. Deployed across Army hospitals, rehabilitation centres, and veterans welfare programmes nationwide.

## What PUNHA Brings

- Working technology — 2 functional prototypes built and tested
- Real deployment — 1 user wearing arm for 30+ days with daily independence restored
- Institutional validation — Genesis EIR — AIC BIMTECH — MeitY Startup Hub
- Manufacturing — 20 units per month, operational today, in India
- Regulatory — CDSCO approval process initiated

## Contact Information

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☐ **Our soldiers gave everything for India. PUNHA gives something back. One arm. One soldier. One life restored. 100% Made in India.**