



DEFENSE ROBOTICS · CONFIDENTIAL

THAR

Tactical Quadruped Ground Robot

Precision. Power. Preservation of Life.

INVESTOR & PARTNERSHIP PITCH DECK

OPERATIONAL PARADIGM



- **Harsh Terrains:** Mountains, soft sand, and extreme heat defeat wheeled/tracked UGVs
- **High-Risk Missions:** Border patrol and recon expose soldiers to lethal threat
- **THAR Solution:** Agile AI-driven quadruped built for Saudi extreme environments
- **Doctrine:** Expendable yet lethal — machines take the risk, not soldiers

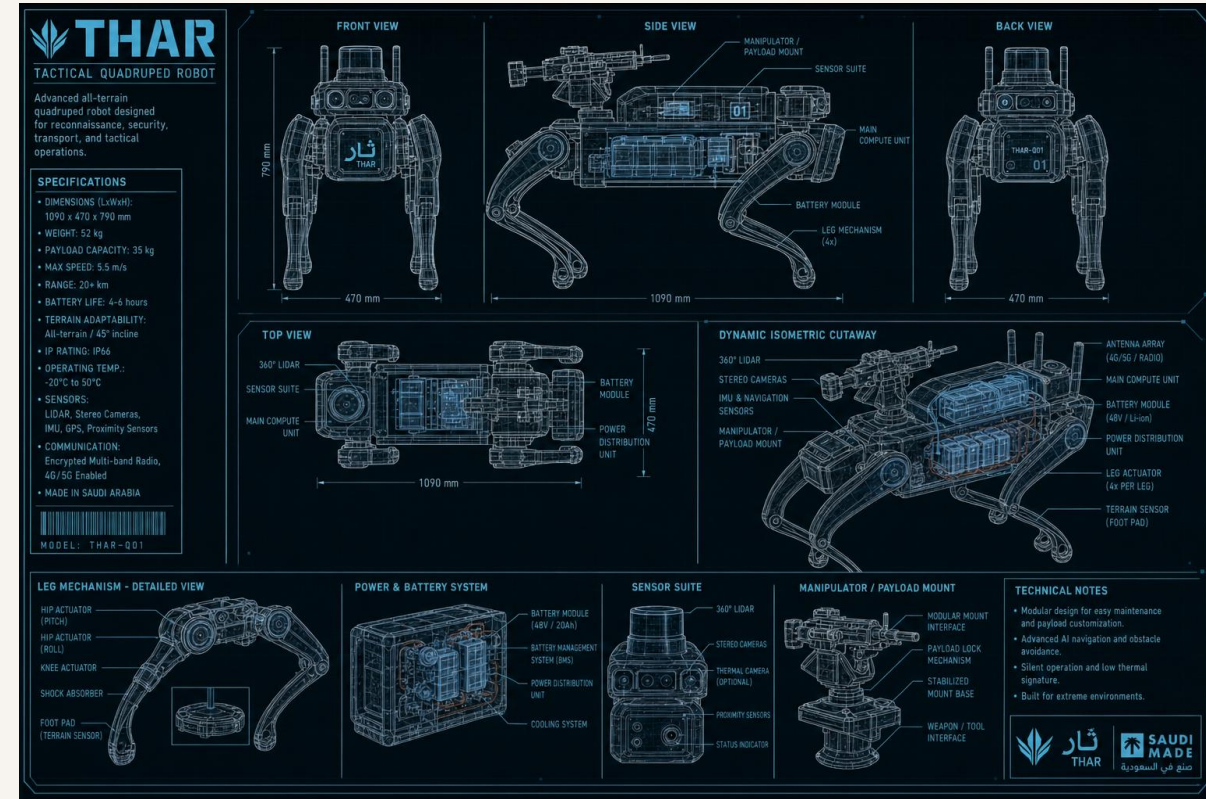


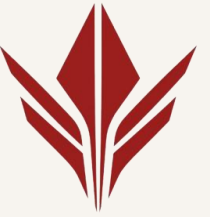
Core mission: project autonomous capability into hostile zones while shielding human life.

ENGINEERING & MATERIALS



- **Chassis:** Aerospace Aluminum 7075-T6 + CFRP / Kevlar shielding
- **Dimensions:** 1.2 m L · 0.8 m W · 0.9 m H
- **Mass & Payload:** ~50 kg base · up to 20 kg tactical payload
- **Thermal:** Active liquid-cooling for continuous 50°C+ operation
- **Sealing:** IP67+ labyrinth joints against silica dust ingress





MULTI-MODAL SENSOR FUSION



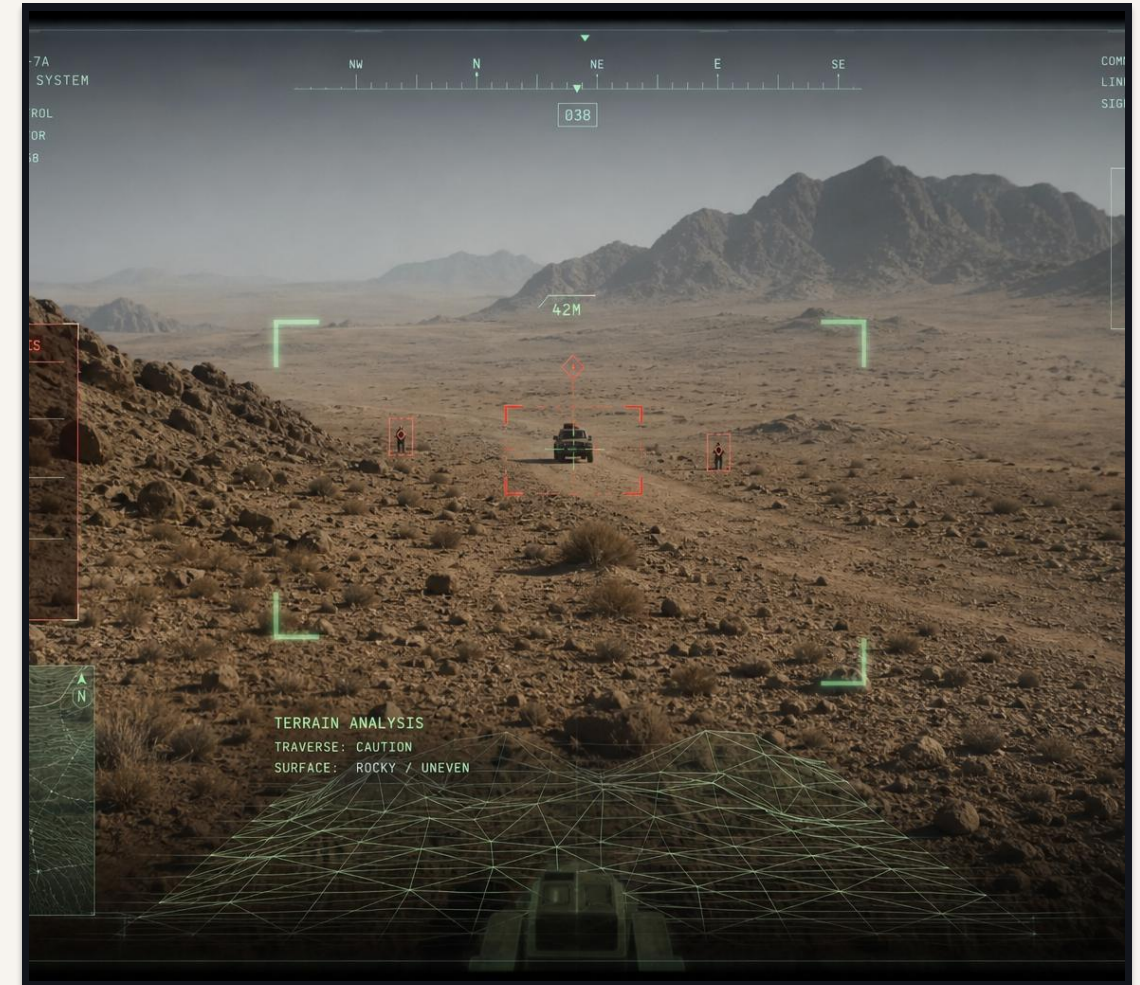
- ▶ **3D LiDAR:** Solid-state real-time mapping and SLAM
- ▶ **Thermal Imaging:** FLIR Boson long-range heat signatures
- ▶ **RGB-D Vision:** HDR stereo for close-quarters avoidance
- ▶ **Optics:** Sapphire lenses against sand abrasion
- ▶ **Mission Profile:** Zero-visibility sandstorm and night operations

EDGE COMPUTING & AI



- ▶ **Compute:** NVIDIA Jetson Orin NX up to 100 TOPS
- ▶ **OS Stack:** Hardened Linux with ROS 2
- ▶ **Autonomy:** Waypoints, dynamic avoidance, threat classification
- ▶ **Tactical HUD:** Encrypted FPV with AI brackets & telemetry
- ▶ **Sovereignty:** No cloud dependency for critical survival loops

Zero latency. Total sovereignty including GPS-denied and jammed environments.





KINEMATICS & ACTUATION



- ▶ **Quasi-Direct Drive:** 12 DoF high-torque BLDC actuators
- ▶ **Proprioception:** Motors feel terrain via current spikes
- ▶ **Reflexes:** Micro-second adjustments without optical-only sensing
- ▶ **Agility:** Steep inclines, rubble traversal, and fall recovery
- ▶ **Balance:** Low center of gravity for high-speed stability

MODULAR PAYLOADS & POWER



- ▶ **Power:** 60V high-discharge Li-ion pack
- ▶ **Hot-Swap:** Battery exchange in under 60 seconds
- ▶ **Endurance:** Up to 3 hours mixed-terrain operation
- ▶ **Rails:** NATO Picatinny for ISR, logistics, and LRWS
- ▶ **BMS:** Dynamic power routing by mission priority



ADVANCED 3D VISUALIZATION



Cinematic and isometric renders highlighting subsystems, thermal vents, and payload rails.



FIG · ISOMETRIC PLATFORM



FIG · DYNAMIC POSE SHEET

ORTHOGRAPHIC PROJECTIONS



Precision engineering from every angle — rapid manufacturing, weight distribution, maintenance access.



LEFT



RIGHT



TOP



Head



DEPLOYMENT ROADMAP

PHASE 1

CURRENT

Prototype design, simulation, and full engineering specifications.

PHASE 2

Q3 2026

Manufacture 3–5 physical prototypes for Saudi terrain field testing.

PHASE 3

2027

Advanced military payload integration and active deployment trials.



Objective: Secure strategic partnerships for Phase 2 manufacturing and field validation.



THAR

The Future of Ground Operations

Thank You.

Ready for Technical Deep-Dive.

By MOHMMAD ABYAH

CONFIDENTIAL · THAR DEFENSE ROBOTICS

 **THAR**
TACTICAL QUADRUPEL ROBOT

**BUILT FOR THE MISSION.
DESIGNED FOR THE FUTURE.**

THAR is an advanced all-terrain quadruped robot engineered for reconnaissance, security, transport, and tactical operations in the most demanding environments.



ALL-TERRAIN
Operates in all environments
with unmatched agility
and stability.



RECONNAISSANCE
Advanced sensors and
real-time intelligence
for situational awareness.



SECURITY
Force protection and
surveillance missions
with high reliability.



PAYLOAD VERSATILITY
Modular design for
weapon systems, sensors,
and mission-specific gear.



AUTONOMOUS
Intelligent navigation
and autonomous
operation capability.

ENGINEERED AND MANUFACTURED IN SAUDI ARABIA

THAR represents the next generation of robotic systems,
proudly developed with Saudi innovation and built to
empower modern defense forces.

