CASE STUDY

DESIGN OF TAKSHAK

DISRUPTOR MOUNTED ROBOT

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DISRUPTOR MOUNTED ROBOT

BACKGROUND
Defence Research and Development Organization (DRDO) approached Onio with a mandate to design a swift six-wheel robot for diffusing IEDs and suspicious objects. This device would be used by the army, paramilitary forces and police for counter – insurgency operations. The Industrial Designers at Onio conceptualised the product with a distinct chassis and body like an automobile to aid easy aggregation of multiple parts.

SCOPE & CHALLENGE
1. Project Timeline – delivery of the functional product to be within six months
2. Maintaining the engineering and design accuracy and sync
3. Keeping the costs low and meeting functional requirements
4. Product to look aesthetic – design intent must be communicated by the form

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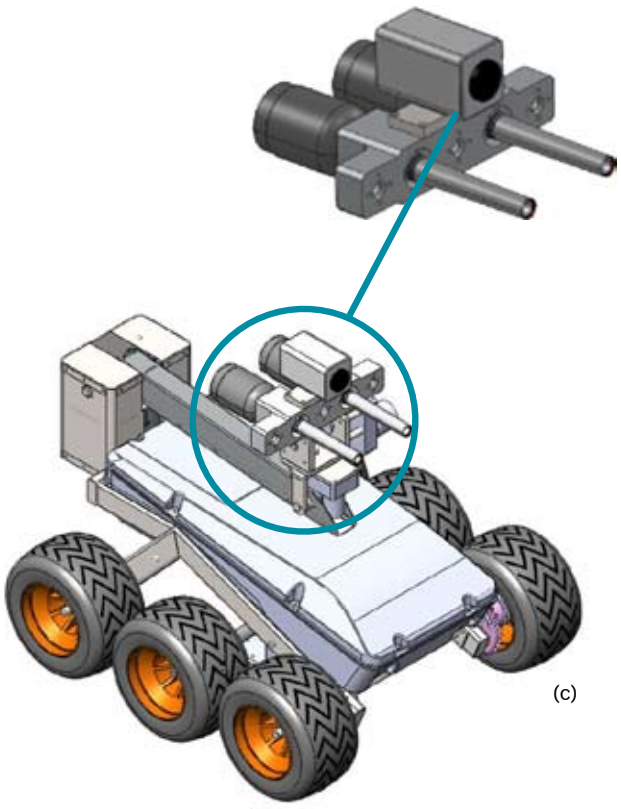
ONIO'S SOLUTION
Onio developed a remotely operated portable device capable of being deployed in cross-country terrains and confined spaces within culverts. Not only was it a completely ready-to-deploy product but it also was far more user-friendly, compact and aesthetically sophisticated to its predecessors.

In the process, Onio delivered multiple business benefits like:
- Equipping the vehicle with two recoilless water jet disruptors which can be fired individually
- Having a backpack mounted Master Control Station with an intuitive Operator Console
- A 3 – axis swivelling arm along with lasers & high intensity CCD camera for aiming at the target
- Great space management done to enable a slender look
- Developed along with the automobile & prototype vendor base in Pune with in-house assembly and finishing
- Accuracies of manufacturing ensured through engineering design and CNC machining
- Engineering design is reflected in the following- Design for Manufacturing, compliance of design procedures of engineering components, new developments, vendor suggestions, efficient manufactuing, good choice of available bought-out parts, correct geometric tolerances & finish

Bagpack user test & Camera and recoilless water jet disruptors



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