

## Concept Design of Special Purpose Vehicle for Indian Military



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**Abstract:**

Light specialist combat vehicles are required for the Military for a quick response to the attacks with effective maneuverability, survivability and combat. While focusing on to Indian defense scenario, the battle zones are moved from conventional to unconventional like terrorist attacks, border incursion and jungle warfare which highlights the requirement of an agile compact transportation medium for reconnaissance activities along with the border patrolling and counter attacks. The combat vehicle must be able to meet military requirements such as engine power efficiency, better internal space, more lethal force, armour protection, more ammunition storage, latest communication facilities, multipurpose utilities and remote weapon stations.

The requirement of a vehicle for Indian defense forces in future is studied from the analysis of various defense agencies. The opportunity gap was analysed with the existing defense vehicles in India along with the International defense vehicle market. The product design specification was generated with the help of Quality Function Deployment (QFD) matrix and customer voice isolated from the military personnel's across various army wings. The requirements of the transportation from army location to combat zone was analysed thoroughly along with the ergonomics data to reach overall packaging dimension of the vehicle. The concepts were generated based on the Product Design Specification (PDS) and customer voice like integrating sharable platform for various weapon stations, addition of communication facilities to line up with the battle command control and multi-purpose activities like border patrol, recce operations and quick attacks. Selected concept was justified with the exterior and internal defense vehicle features and a mock up model visualization.

It is observed that the design features of the vehicle can meet the requirements of Indian Army and protect the interest of the country against the future threats.



**Finalised concept of vehicle**



**Exterior features of vehicle**



**Photo realistic rendering**



**Interior design of vehicle**



**Mockup model of vehicle**