

Technological trends in the defence sector

Emerging technologies such as robotics and automation, artificial intelligence, mixed reality, blockchain and 3D printing are transforming and disrupting business models to a large extent. With these technological advancements, the defense industry is witnessing various challenges of having a large order book and servicing companies as soon as possible. This means that they have to expedite all their deliveries including assembling aircrafts faster, the quality of maintenance and provision of after sales service.

These opportunities can be captured with emerging technologies such as robotics, automation, AR/VR and simulation to expedite the complete aircraft manufacturing process efficiently. Post manufacturing, there are technologies that we apply mainly on the cloud and big analytics that scans all the logs, complaints, suggestions and requests received from an aircraft user and quickly categorizes them and address them. Digital twin is another technology extensively being adopted by manufacturers to accurately predict the current state and future of physical assets by analyzing their digital counter parts. It col-

lects industrial internet of things data from deployed assets and then model asset performance across the fleet—based on op-

gies grouped under Industry 4.0 are a very important aspect for both design and manufacturing industries. It improves the qual-

production considerably. Augmented reality helps in perceiving the information that is displayed within the soldier's visual field thus reducing the need for training and support.

Main applications being assistance from remote experts, information display and Quality analysts. On the other hand, the use of artificial intelligence with learning capability, the Indian defense sector is rapidly being digitally transformed. The strategic and tactical intelligence processing

has now moved out from typical command centers to an autonomous and augmented military intelligence network.

As far as the defence industry is concerned, it is set to benefit immensely with the use of emerging technologies in manufacturing of autonomous systems, robotics and a host of other solutions for land, sea, air and space environments. The recent establishment of a multi-stakeholder task force on Strategic Implementation of Artificial Intelligence by the Central gov-

How is AXISCADES helping the defense sector move ahead

AXISCADES is a home-grown end-to-end engineering services firm, providing services across verticals such as aerospace, defence, automotive, heavy engineering and medical technology with aerospace alone generating 40% of our overall revenues.

At AXISCADES, our solutions prioritize on air force followed by land and naval requirements. The most important requirement today is to strengthen the air force, be it fighter jets or drones or controlled environment vehicles. We are currently working on fighter aircraft platforms and UAVs and the technology used here is on the radar, electronic warfare and command and control and interface which are incorporated into avionics. These also use elements from the emerging technologies. We are focused on providing modern avionics since India comes with a very strong presence in electronics and software. So, it is natural for us to add a lot of value in the avionics sector.



erational data over many time periods in order to optimize the performance and reliability of products. Using this data, prescriptive analytics then provide value through condition-based maintenance, availability, and safety adjustments.

Industry 4.0

Industry 4.0 is a combination of latest technologies like digitization, big data, analytics, IoT, additive manufacturing, automation, simulation and augmented reality. All the technolo-

gy of the product and offers the ruggedization that it requires, be it from the harsh conditions of temperature or weather conditions.

For all these multiple break-ups, Industry 4.0 plays a huge role in expediting and delivering all of these quickly. Therefore, I believe that adopting Industry 4.0 technologies will enable us to achieve all these KPIs consistently and effectively. Additive manufacturing involves 3D printing that enables decentralized production and also improves the