

TAGMA TIMES

NEWSLETTER

(Technical Info. on Die, Moulds & Toolroom)

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March 2021

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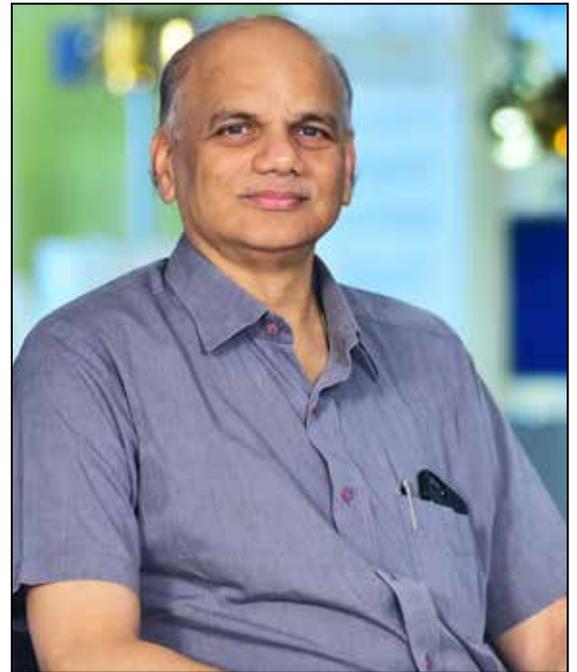
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Mr. S. M. Vaidya,

Executive VP & Business Head - Godrej Aerospace, Godrej & Boyce Mfg. Co. Ltd.

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Time to soar



The pandemic is a perfect example of an opportunity in adversity. Yes, it slowed down the economy, disrupted the global supply chain, and had an adverse impact on many businesses. But, it also took toolmakers out of their comfort zone, forced them to think out of the box and find newer avenues to explore.

In the present challenging scenario, the aerospace and defence industries have opened the doors of opportunity for Indian MSMEs. The Government of India campaigning for achieving self-reliance in defence production and inviting private sector participation, through major events like Aero India, have provided impetus to indigenous manufacturing. These steps have created enviable prospects for Indian MSMEs.

Besides this, the Government of India has increased the defence budget. To quote statistics, India's defence budget for 2020-21 was estimated to be around \$67.4 billion, which is 9.37% higher than that in 2019-20. Further, to support the development of military procurement, in October 2020, the Indian government lifted the expenditure restrictions on defence spending. As a result, the Ministry of Defence would be able to spend in line with its quarterly expenditure plan, which includes emergency procurement processes of more than 100 contracts, each with a budget of about \$67.10 million.

These recent developments spell good news for toolmakers, who have bagged a crucial role in the indigenous manufacturing of defence equipment and components. However, they need to align their future strategies and skills, keeping the demand from the aerospace and defence industries in mind. Undoubtedly, the strategies and skills may be very different from those required by the automotive and packaging industries. However, this is the need of the hour! Toolmakers need to adapt to the changes and act accordingly.

The March 2021 issue of TAGMA Times delves into the opportunities that the aerospace and defence industries present. The 'In Focus' section highlights various aerospace and defence deals with promising prospects, while Mr. S. M. Vaidya, Executive VP & Business Head - Godrej Aerospace, Godrej & Boyce Mfg. Co. Ltd., explains why toolmakers should consider diversifying into the aerospace and defence sectors.

Toolmakers, spread your wings and look for the opportunities that are presenting itself. As the 'In Focus' story of TAGMA Times suggests, it's time to 'Aim for the sky!'

Happy Reading!

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HAL signs agreement with Elbit Systems for supply of Digital Overhead Head Up Display Systems

HAL entered into an agreement with Elbit Systems Electro Optics Elop Ltd., Israel, for the supply of Digital Overhead Head Up Display Systems (DOHS) during the recently concluded Aero India-2021. The Digital Overhead HUDs will be initially manufactured in the existing facility of HAL's Division at Korwa. A dedicated facility will be augmented progressively in proportion to the manufacturing volume.

HAL and Elbit Systems have envisaged mutual co-operation to upgrade its technological base and acquire high-end technology on the Digital Overhead HUD System, which is primarily used in transport aircraft worldwide. The Digital Overhead HUD with modern optics provide sharp brightness, larger field of view and larger head motion box.

Toyoda Gosei receives Toyota's Technology & Development Award for development of high-pressure hydrogen tanks

TOYODA Gosei Co. Ltd. recently received the Technology & Development Award from Toyota Motor Corporation for the development of high-pressure hydrogen tanks used on the new MIRAI, launched by Toyota in December 2020.

High-pressure hydrogen tanks are a crucial component for fuel cell vehicles (FCVs), which efficiently hold hydrogen compressed at high pressure (about 700 atm). The new MIRAI is equipped with three hydrogen tanks, one more than the previous model, to extend its cruising range. This is an issue that is important for the widespread adoption of FCVs. Toyoda Gosei



produces the third high-pressure hydrogen tank, which is located in the rear of the new MIRAI, while Toyota continues to produce the other two.

Toyoda Gosei developed the new tank together with Toyota Motor Corporation. For the new tanks, improvements have been made in the materials used in the carbon fibre

reinforced plastic layer, one of the three layers of the tank wall (layer to withstand high pressure), production methods and other factors. As a result, the hydrogen storage efficiency of the tank, which is the ratio of the mass of stored hydrogen to the mass of the tank, was increased about 10% by minimising the wall thickness to increase the inner volume while maintaining the pressure resistance strength.

Toyoda Gosei will continue to develop products leveraging its core technologies of rubber and plastic with the aim of supporting the spread of electrified vehicles such as electric vehicles (EVs) and FCVs.

Union Minister discusses collaboration in space sector with Brazilian counterpart

UNION Minister of State (Independent Charge) Development of North Eastern Region (DoNER), MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr. Jitendra Singh said that India's ascent to the World Comity of Nations will happen via Space Technology. In a virtual interaction with the visiting Brazilian Minister of Science, Technology and Innovation, Marcos Pontes, and the heads of the Brazilian Space Agency after the successful launch of Amazonia-1 satellite of Brazil by ISRO recently, Dr. Singh said that collaboration between the two countries marks the beginning of a robust bonding and is a role model for other countries to follow. He said, the launch also marked the first dedicated mission of ISRO's commercial arm NewSpace India Ltd.

MoUs and Joint Working Group

- ▶ Since the early 2000s, India and Brazil have signed cooperative instruments for exploration and peaceful uses of outer space, both at the government level (2004) and space agency level (between ISRO and Brazilian Space Agency AEB in 2002).
- ▶ In line with the provisions of the agency-level MoU, a Joint Working Group (JWG) was formed in 2007. The JWG (reconstituted with new members) had a meeting in January 2020. Cooperation possibilities in future space science missions, utilising ISRO's PS4 orbital platform, space weather studies, etc. were discussed.

In his address, Brazilian Minister of Science, Technology and Innovation, Marcos Pontes said that the India-Brazil joint venture in Space Technology will offer new opportunities for companies and will help create new jobs. He said that Amazonia-1 is an optical earth observation satellite and is intended to provide remote sensing images to observe and monitor deforestation, to improve the real-time detection system of deforestation in Brazil, especially in the Amazonia region, and to monitor the diversified agriculture throughout the country. The Minister said that new satellite would open the doors for multiple business, trade and governmental opportunities. Brazil has also requested for India's support in procurement of material and systems for its launch vehicle programme.



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Shri Piyush Goyal calls for working towards ensuring India's recognition on the global stage as a quality conscious country

MINISTER of Commerce and Industry, Railways and Consumer Affairs and Food & Public Distribution, Shri Piyush Goyal recently said that we must work towards ensuring India's recognition on the global stage as a quality conscious country, as a country with which people can do business with confidence. Speaking at the concluding session of the 'Workshop on Easing Compliance of BIS Certifications', he said that quality is profit, and it prepares businesses for greater profits. Quality speaks for itself, and quality is not expensive. It adds to the productivity, helps businesses to get bigger markets so that they can get economies of scale and helps to eliminate wastage.

Urging for a greater collaborative effort through our industry associations, Shri Goyal said that we should make the Indian standard a worldwide accepted standard. He said that the Bureau of Indian Standards (BIS) should operate on a 'QUICK' Model - Quality, Uniformity through one nation one standard, International mindset, Conformity assessment and Knowledge sharing. Our mantra for the day should be 'quick action, quick response, quick absorption of best practices and quicker ways of working'.

Regarding knowledge sharing, the Minister referred to the Udyog Manthan exercise, a marathon of two-month long webinars on Quality and Productivity, in which industry experts, motivational speakers and line ministries took part. He said that it has set the tone to absorb quality and productivity, as the mantras for an 'Atmanirbhar Bharat' where 'Make in India' will hold centre stage and we will expand the frontiers of our trade and business.

The Minister called for more and more use of artificial intelligence, big data and other technology-related solutions to help resolve standardisation



issues facing the industry and other entrepreneurs. Shri Goyal said that the 'ISI Standard Mark' should represent quality, productivity, affordability and accessibility.

The Minister said that the certification process will be simplified. Stating that BIS should ensure the cost of testing never becomes a detriment to conforming to quality and getting certification, he said that there will be reduction of fee for the certification for MSMEs. He said that this is a dawn of a new era of an 'Atmanirbhar Bharat', where digitalisation and efficiency are going to determine India's success in the future. The Minister mentioned that it is protected by quality consciousness of consumers and also by our collective consciousness.

Secretary, Department of Consumer Affairs, Smt. Leena Nandan also

addressed the workshop. She applauded the workshop saying that this is a very fruitful and rewarding session for all participants to reach out to the industry. She said that the Department of Consumer Affairs and the Department for Promotion of Industry and Internal Trade have been working closely to remove the difficulties faced by the industry.

The workshop was jointly organised by the Department for Promotion of Industry and Internal Trade, along with the Department of Consumer Affairs and Bureau of Indian Standards, to facilitate closer interaction between the various sectors of industry and the apex national standards body. Four technical sessions on Standardisation, Testing Activities, Certification Activity and Implementation of QCOs, were organised during the workshop.



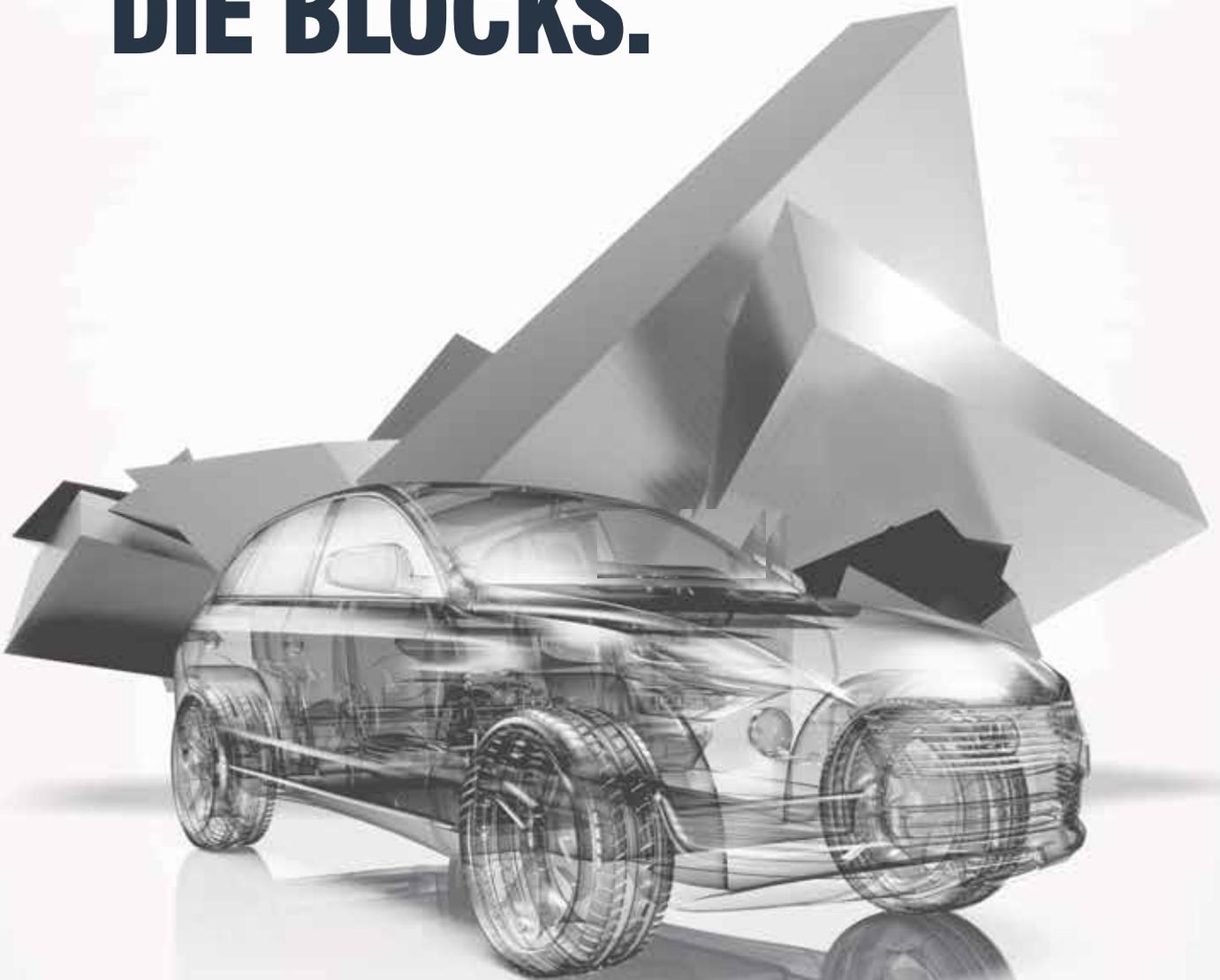
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SIDBI and NSE explore feasibility of debt capital market platform for MSMEs

SMALL Industries Development Bank of India (SIDBI), the principal financial institution engaged in the promotion, financing and development of Micro, Small & Medium Enterprises (MSMEs), has signed a Memorandum of Understanding (MoU) with the National Stock Exchange (NSE) for co-operation in various ongoing MSME-related initiatives of the two institutions and also exploring the feasibility of a debt capital market platform for MSMEs.

Speaking about the MoU, Mr. V. Satya Venkata Rao, Deputy Managing Director, SIDBI, said, "Keeping in view the very large and diversified MSME sector in the country, there is a continuous need for various institutions to co-ordinate and co-operate with each other for the benefit of the MSME sector. Both the institutions run several programs for



Image used for representation only.
Courtesy: Envato Elements

MSMEs, and the co-operation will help increase the impact and reach of these programs."

Mr. Rao also mentioned that the expert committee on MSMEs, headed by Mr. U. K. Sinha has made several recommendations for the MSME sector, including a need to develop additional instruments for debt and equity, which will help crystallise new sources of

funding for MSMEs and in this regard, SIDBI will look forward to jointly working with NSE to explore feasibility of a debt platform for unmet needs of the sector.

MD & CEO of NSE, Mr. Vikram Limaye said, "The NSE has always fostered the use of innovation and technology for the benefit of the Indian industry and investors. We are already committed to the MSME sector. One of the major initiatives has been the SME Exchange. NSE has jointly worked with SIDBI on the Trade Receivables Discounting System (TReDS) project undertaken by the Receivable Exchange of India Ltd. (RXIL) to solve the receivable problems faced by small businesses. We will be happy to work with SIDBI for exploring the feasibility of a debt capital platform for MSMEs and, based on the market feedback, we will plan the next steps."

Successful launches of VL-SRSAM Missile System

DEFENCE Research & Development Organisation (DRDO) recently conducted two successful launches of Vertical Launch Short Range Surface to Air Missile (VL-SRSAM).

The launches were carried out from a static vertical launcher from Integrated Test Range (ITR), Chandipur, off the coast of Odisha. Indigenously designed and developed by DRDO for the Indian Navy, VL-SRSAM is meant for neutralising various aerial threats at close ranges, including sea-skimming targets. The current launches were carried out for demonstration of vertical launch capability as part of its maiden launch campaign. On both occasions, the missiles intercepted the simulated targets with pinpoint accuracy. The missiles were tested for minimum and maximum range. VL-SRSAM with Weapon Control System (WCS) were deployed during the trials.



The launches were monitored by senior scientists from various DRDO labs involved in the design and development of the system such

as DRDL, RCI, Hyderabad and R&D Engineers, Pune.

During the test launches, flight path and vehicle performance parameters were monitored using flight data, captured by various Range instruments such as Radar, EOTS and Telemetry systems deployed by ITR, Chandipur.

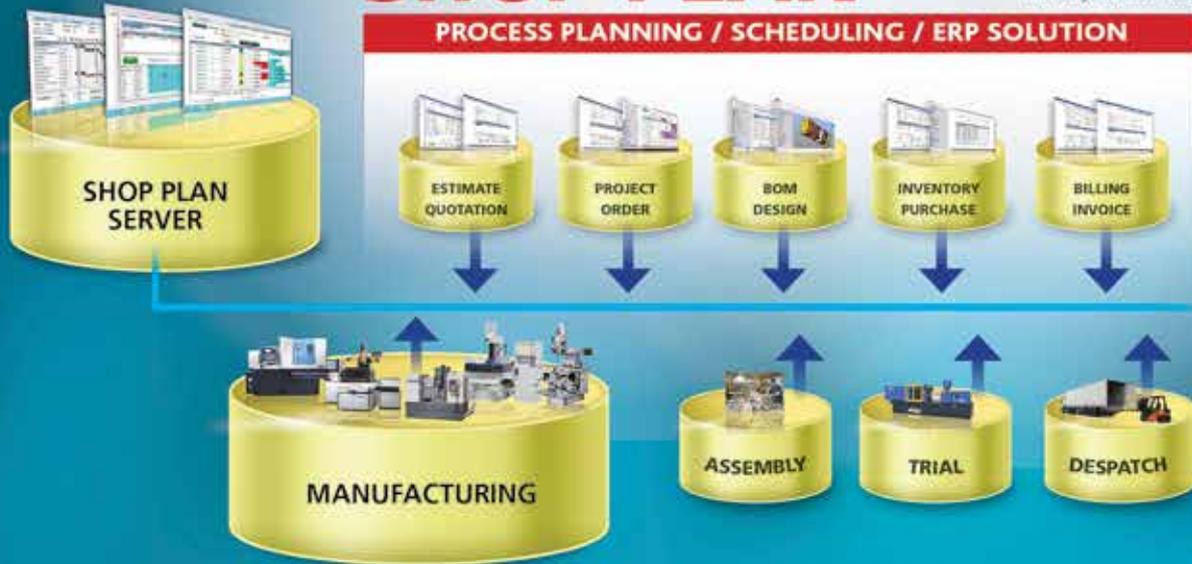
The present trials have proved the effectiveness of the weapon system and a few more trials will be conducted shortly before deployment on Indian Naval ships. Once deployed, the VL-SRSAM system will prove to be a force multiplier for the Indian Navy.

Raksha Mantri Shri Rajnath Singh congratulated DRDO on the successful trials. Dr. G. Satheesh Reddy, Secretary, DD R&D, and Chairman, DRDO, congratulated the teams involved in the successful flight test of the VL-SRSAM Missile System.

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'Government will make efforts to create level playing field against unfair competition in promoting toy industry'

SHRI U.P. Singh, Secretary, Ministry of Textiles, has said that the first-ever virtual 'India Toy Fair, 2021' envisioned by Hon'ble Prime Minister Narendra Modi, in his 'Mann Ki Baat' address in August 2020, is a great beginning, which will give a lot of fillip to the toy industry. Participating in a webinar on 'Success Stories of Entrepreneurs working with Traditional Toy Clusters' during the India Toy Fair-2021, Shri Singh stated that toys have been identified as one of the 24 key sectors under the 'Atmanirbhar Bharat Abhiyan'.

He said that a National Action Plan for toys has been created by the Department for Promotion of Industry and Internal Trade (DPIIT), which calls to action many central Ministries, including Textiles, MSME, I&B, Education, DPIIT, under the Ministry of Commerce, and other departments, to nurture and promote the industry. He stated that Toycathon-2021 was conceived to challenge India's innovative minds to conceptualise novel toys and games and to crowdsource solutions to different problems faced by the toy industry.

Shri Singh said that The India Toy Fair 2021 has brought together all stakeholders of the industry onto a common platform to create sustainable linkages and promote dialogue for the holistic development of the industry and present to the globe the richness and vastness of India's toy manufacturing capabilities. He said that efforts will be made to help the toy clusters create toys with blending of tradition and demand of modern time and issues of safety, sustainability and eco-friendliness will be taken care of. He said that the government is looking forward to new ideas being generated for the toy industry during the Fair, such as capacity building, design, innovation in toys, upgradation of machinery and marketing, etc., which may be



Shri U.P. Singh, Secretary, Ministry of Textiles, expressed hope that India will have substantial share in toys exports in the days to come.

Photo Credit: Envato Elements
Image used for representation only.

incorporated in future schemes/policies. He expressed hope that India will have substantial share in toys exports in the days to come. The webinar on 'Success Stories of Entrepreneurs working with Traditional Toy Clusters' focused on traditional toy crafts of India, opportunities of reviving and giving a modern twist to traditional Indian toys, manufacturing challenges, marketing and packaging solutions for traditional toys and policy interventions.

Participating in the Webinar on 'Scaling up Toy Exports from India', Dr. Anup Wadhawan, Secretary, Ministry of Commerce said that TITF intends to bring policy makers, toy manufacturers, distributors, investors, industry experts, MSMEs, artisans, startups, children, parents and teachers together on a common platform in a bid to propel the growth of the Indian toy industry and to give it a global competitive edge. He mentioned that there is significant export potential from India in the toy sector. There is need to create an enabling environment for potential exporters to improve productivity and technological content of our products. Dr. Wadhawan further stated that the government intends to promote

toy clusters through innovative and creative methods. Toy manufacturing clusters should be developed by state governments to attract international players to set up their manufacturing base in India. He also emphasised on the promotion of toy-based tourism, local toy banks and libraries.

The Secretary further informed that the government will make all efforts to create a comparative environment, a level playing field against unfair competition from cheap and substandard imports in promoting this endeavour. He also urged the industry to identify and raise specific issues of ease of doing business impacting toy exports that can be ironed out with the help of the government departments concerned. He also assured full support of the Department of Commerce in ensuring promotion of Indian toys, domestically and globally, in an early timeframe. The webinar on 'Scaling up Toy Exports from India' shared the perspective of industry players on how India can be made an export destination for toys and discussed the government's views in terms of policies for encouraging exports of toys from India.

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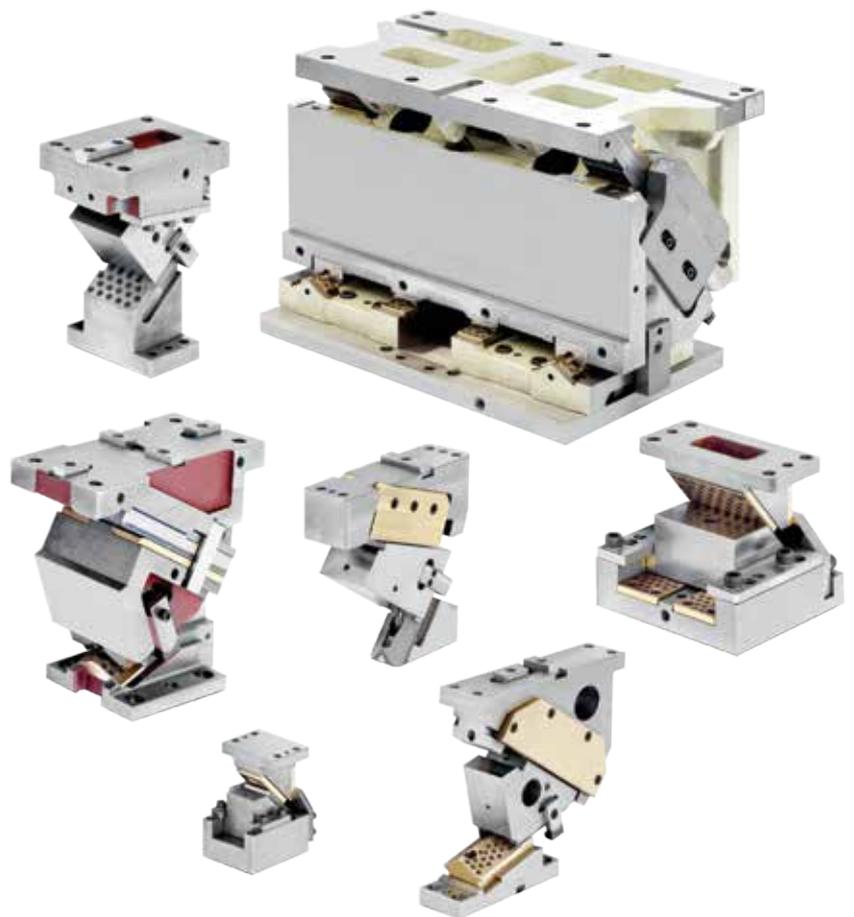
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Therefore, in the future, new EU legislation will require the certification of all medical products for biocompatibility. For CERATIZIT's customers, the certification of non-cytotoxic carbide and cermet grades represents a monetary advantage against this background, as explained



by Development Engineer Dr. Michael Dröschel: "With our materials that are already certified to DIN EN ISO 10993-5, we are removing an important obstacle in the certification of our customers' end products, thus saving them time and money."

The CERATIZIT Group worked together

with Creamedix GmbH in Weingarten (Baden) for certification of the new materials. The ISO 17025-accredited bioanalytics laboratory specialises in the testing of medical products and their source materials for biocompatibility according to ISO 10993, and, in particular, in-vitro based analysis systems as an alternative to animal models.

Wide product spectrum

With the new grades, CERATIZIT covers a wide spectrum of products. Whether a standard stock product or a tailor-made blank, CERATIZIT supplies specific carbide grades for a wide range of applications in the medical technology industry: from tools such as drills and dental burs to needle holder plates, through to forceps and much more.

The products are suitable for a broad range of applications, such as bones, tissue and tendons as well as for titanium, metal alloys, and ceramics.

Intech Additive Solutions launches its Large Format range of Metal 3D Printers - the 'iFusion LF series'

INTECH Additive Solutions Pvt. Ltd. (Intech) has announced the expansion of its range of Metal 3D printers with the launch of the 'iFusion LF series', its Large Format range of Metal 3D Printers with a high build rate for cost-effective manufacturing. Intech is the first Indian OEM that has successfully developed and supplies 3D metal printers based on laser powder bed fusion technology (LPBF) for industrial manufacturing,

The 'iFusion LF series', entirely developed and built at Intech's facility at Bengaluru, has a range that starts with a single 500W laser printer and is upgradeable to a quad laser configuration with 700W and 1000W

lasers, if required. The LF series of machines require the lowest initial investment to procure and install, as compared to other similar-sized metal 3D printers, along with locally available spares and support.

This 'Made in India' product from Intech is a result of extensive research, development and innovation spread over the past almost 4 years. The 'iFusion LF series' large format 3D printers, tightly integrated with Intech's software suite for Metal Additive Manufacturing with a build volume of 450x450x450mm, aims to deliver robustness and productivity at a competitive MHR and lowest cost per part (CPP).

"Indian companies have a huge interest in 3D Printers that build parts larger than 400mm. All these machines must be imported and are prohibitively expensive. There are other issues like long lead times for support and spares, making Indian companies ultimately settle for the less expensive mid-sized machines. The 'iFusion LF Series' amply fills this void," said Pradeep Nair, Vice President-Hardware Sales, Intech. "The system supports a wide range of materials like aluminium, titanium, steel, inconel and cobalt chrome, addressing the needs of industries such as aerospace, automotive, general engineering, tools & dies and the medical market segments in India and abroad," added Nair.

Trillion-dollar digital economy possible in the next four years

APEX Industry body ASSOCHAM released a research report along with The Dialogue, titled 'Enabling a Trillion Dollar Digital Economy,' in a virtual event held recently. The event saw a host of eminent speakers, including Dr. Amar Patnaik, Honorable Member of Parliament, Ms. Jyoti Arora, Special Secretary & Financial Adviser, Ministry of Electronics and IT, Ms. Anita Praveen, IAS, Additional Secretary, Department of Telecom, and Mr. S. K. Gupta, Secretary, TRAI.

Dr. Patnaik stated that one of the greatest things that India has managed to achieve during the challenging COVID times is the increase in digital transactions, which has helped sectors like healthcare and education immensely. "Digital economy has the potential to bring 90% of the informal sector to the formal one. For us to achieve that, we need to ensure that we have a strong digital infrastructure in place," he said.

Dr. Patnaik highlighted the need to ensure that people from the most remote corners of the country have access to the internet. He opined that there is also a need to incentivise the private sector to ensure a greater level of participation. "Through digital technology, one can ensure that improved banking services can be provided in most villages. It can also help in the distribution of the talent pool in all areas, which is restricted only to urban cities and towns now," he pointed out.

Mr. Gupta informed that the telecom sector directly contributes around 6.5% to India's GDP. However, its indirect contribution would be in the range of 30%. "The importance of digital technology can be understood during the time of the pandemic. If most of us are sitting at home and still be connected to get our work done, then it means a lot of work has gone in doing so," he said.

While congratulating the telecom workforce for keeping people connected during the pandemic, Mr. Gupta informed that till December 2020, there were around 1.15 billion mobile phone users in the country. "Around 775 million users in India used internet facilities. The sector has shown remarkable growth in the last 5-6 years. We have already gained the distinction of being one of the highest consumers of mobile data in the world," he said. He also explained that there is a need to create an online digital permission framework to facilitate the industry for greater participation.



Image used for representation only.
Courtesy: Envato Elements

Ms. Arora stated that there has been a huge reduction in the transaction cost using digital technology. "Earlier, for the verification of documents, there was a cost incurred to the tune of INR 300 to INR 400. Now, through Aadhaar-enabled e-verification, the costs have come down to just INR 2 to INR 3, which is indeed remarkable," she said.

She explained that digital technology has also given a huge boost to several sectors, including banking. "The UPI payments in January 2021 have witnessed 2.3 billion transactions worth \$4.3 trillion dollars. Emerging technologies in sectors like agriculture can do wonders. As the use of precision technologies using drones can help double the farmer's income," she added.

Ms. Praveen stated that digital technology plays an important role in the country's ease of doing business mechanism. "Digital technology

ensures that sectors like education and healthcare continue to perform with full efficiency. Through online education and tele-health services, people living even in remote corners of the country use these services. However, a lot more needs to be done to bridge the digital divide," she said.

Shri Kazim Rizvi, Founding Director, The Dialogue, added that there is a need to fast track setting up of digital infrastructure in the country. "There is a need to increase investment in infrastructure to ensure that internet travels to the last mile in the country and expand the base beyond 1 billion users," he said. He added that there is a need to increase collaboration and partnership with like-minded countries to help the country achieve an 8% to 10% growth rate.

Mr. Deepak Sood, Secretary General, ASSOCHAM, explained that this pandemic has also accelerated the digitisation rate, which may have lasting impacts on our lives and the economy. "Our digital infrastructure needs to be enhanced to tackle this phenomenon. Commitment and urgent actions to promote long-term growth of the digital economy that are required to improve the health of the industry and the investments in the digital infrastructure," he said.

Mr. P Balaji, Chairman, National Council on Digital Communications, stated that a data-driven economy, like India, demands a continuous cycle of investments, particularly to meet the vision of a trillion-dollar digital economy. He said that while telecom is the foundation of the digital revolution, equally important are platforms, apps, content, etc., and emphasised on the need for a collaborative effort to grow the digital economy. "The digital ecosystem is interlinked and interconnected. Success of the digital economy depends upon each and every component of the ecosystem."

Aim for the sky!



Opportunities are opening up for the Indian defence and aerospace industries. News reports highlight that India is extensively focussing on indigenous production and is attracting investments from companies across the globe. India is gradually developing into a manufacturing hub for global firms, who have reportedly expressed interest in 'Making in India' and sharing profits. This manufacturing growth story could possibly open up several prospects for toolmakers. However, toolmakers need to equip themselves with the necessary infrastructure and skills before they look to explore what these industries have to offer.

Kimberley D'Mello

Image used for representation only. Courtesy: Envato Elements

COVID 19 hung like a dark cloud of gloom over the world all through 2020. But this dark cloud also had a silver lining. Several companies, including SMEs and MSMEs, realised that if they want to stay afloat and survive, they will need to find ways around this crisis. While some companies decided it was best to go lean, others, which were only focused on one industry, found that diversifying into other sectors could provide better opportunities.

Industry experts believe that toolmakers need to explore newer avenues, if they want to prosper. Rather than only focusing on just a single industry, toolmakers must bring themselves out of their comfort zone and explore other sectors. Tooling is one industry that finds applicability in various sectors. This can prove to be advantageous for toolmakers. All they need to do is find other sectors, where opportunities are waiting to be tapped. This article highlights the opportunities that the defence and aviation industries can offer the tooling industry.

Higher investments

The Government of India has allocated a substantial amount of funds for the defence sector. According to a Stockholm International Peace Research Institute (SIPRI) report on 'Trends in World Military Expenditure, 2019', India's military spending grew by 6.8 per cent to \$71.1 billion in 2019, making the country the third largest military spender in the world, after the US and China. The government has also introduced a slew of investment-friendly policies to attract foreign direct investment (FDI).

Among the other prominent initiatives to promote the aerospace and defence industries is 'Aero India', a major exhibition. Through 'Aero India', these industries get an opportunity to boost business, as they gain market insights and announce new developments while showcasing their unique capabilities. Besides this, the government has attempted to open up a plethora of opportunities for the defence and aviation industries through campaigns such as 'Make in India' and 'Vocal for Local', which promote 'atmanirbharta' or self-reliance.

In Focus

Indigenous efforts

Owing to the abovementioned efforts, India is rapidly developing into “the preferred manufacturing hub”, as it is not only aggressively attracting foreign direct investments but also indigenising on a rapid scale, news reports highlight. Let’s take a look at some of the indigenous opportunities that Indian organisations have already tapped into in the aviation and defence industries.

▶▶ DRDO and Indian Army develop 9mm Machine Pistol

DRDO and Indian Army have jointly developed India’s first indigenous 9mm Machine Pistol, named ‘Asmi’. “The Infantry School, Mhow, and DRDO’s Armament Research & Development Establishment (ARDE), Pune, have designed and developed this weapon using their respective expertise in the complementary areas. The weapon has been developed in a record time of four months,” said a press release.

“The Machine Pistol fires the in-service 9mm ammunition and sports an upper receiver made from aircraft grade aluminium and lower receiver from carbon fibre. 3D Printing process has been used in designing and prototyping of various parts including trigger components made by metal 3D printing,” added the press release.

According to the press release, the weapon has huge potential in the Armed forces, as personal weapon for heavy weapon detachments, commanders, tank and aircraft crews, drivers/dispatch riders, radio/radar operators, Closed Quarter Battle, counter insurgency and counter terrorism operations, etc. This is also likely to find huge employability with the central and state police organisations as well as VIP protection duties and policing. The Machine Pistol is likely to have production cost under INR 50,000 each and has potential for exports.

“Within the next 4-5 years, this country will have a lot of indigenous content in the Indian armed forces and we will be seeing tremendous amount of increase in exports.”

**G. Satheesh Reddy,
Chairman, DRDO
(at a webinar organised by CII)**

▶▶ Indian Army signs a \$20 million contract with ideaForge to procure SWITCH UAV

The Indian Army has signed a contract of approximately \$20 million for undisclosed quantities of a high-altitude variant of ideaForge’s SWITCH



Image used for representation only. Courtesy: Envato Elements.

UAV, which will be delivered over a period of 1 year, revealed the ideaForge website.

According to the website, SWITCH UAV is an indigenous system built to cater to the most demanding surveillance operations of the Indian Forces. This Fixed Wing VTOL (Vertical Take-off and Landing) UAV can be deployed at high altitude and harsh environments for day and night surveillance in Intelligence, Surveillance and Reconnaissance (ISR)

“The trials saw about a dozen national and global players compete to meet the operational requirements. SWITCH UAV is the only product that cleared the Indian Army’s stringent product trials and surpassed expectations. It is a testimony of the fact that our systems are built like a bird and tested like a tank.”

**Ankit Mehta,
CEO, ideaForge**



The Machine Pistol fires the in-service 9mm ammunition and sports an upper receiver made from aircraft grade aluminium and lower receiver from carbon fibre.

missions. It is man-portable and has the highest time on target compared to any other UAV in its class.

▶ **HAL delivers biggest-ever cryogenic propellant tank to ISRO**

Hindustan Aeronautics Ltd (HAL) recently delivered the biggest cryogenic propellant tank (C32 LH2) ever fabricated by the company to ISRO. The C32-LH2 tank is a developmental cryogenic propellant tank of aluminium alloy designed for improving the payload capability of GSLV MK-III launching vehicle, said a press release.

“The four metre diametric tank is of eight metre length to load 5755 kg propellant in the 89 cubic metre volume. Total length of weld carried out in the tank was 115 metre at different stages to the quality requirement of 100% tests on radiography, die penetrant check and leak proof. HAL has mastered the skills and technologies required for fabricating welded propellant tank of aluminium ally to such stringent quality requirement,” added the press release.

HAL has also supported ISRO right from the developmental phase of the Crew Atmospheric Re-entry Experiment, PAD Abort test for Crew Escape for Human Space Mission and is currently building hardware for full-fledged launch vehicle, GSLV Mk-III, for the Gaganyaan programme.

“HAL, as a strategic reliable partner, has been associating with ISRO for prestigious space programmes since the last five decades. HAL has supplied critical structures, tankages, satellite structures for the PSLV, GSLV-MkII and GSLV-MkIII launch vehicle. Various new projects like PS2/GS2 integration, semi-cryo structure fabrication and manufacture of cryo and semi-cryo engines are being taken up at HAL, for which setting up of necessary infrastructure and facilities is nearing completion.”

The press statement released by HAL

▶ **Godrej Aerospace manufactures Vikas contour engine for ISRO**

Godrej Aerospace recently partnered with ISRO to successfully launch the CMS-01 communications satellite using the PSLV-C50 from Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota. The CMS-01 is a communication satellite envisaged for providing services in the Extended-C Band of the frequency spectrum. The Extended-C Band coverage will include Indian mainland, Andaman-Nicobar & Lakshadweep Islands.

Godrej Aerospace played a key role by manufacturing the Vikas contour engine used to propel for the second stage of the rocket and satellite thrusters. Godrej Aerospace has been partnering with ISRO to manufacture complex systems such as the liquid propulsion engines for PSLV and GSLV rockets, thrusters for satellites, and antenna systems. Godrej Aerospace has also played an integral part in the Chandrayaan and Mangalyaan missions to the Moon and Mars, respectively.

“It gives us immense pride to be associated with ISRO for yet another successful launch. We are proud manufacturers of the Vikas contour engine and the satellite thrusters and are glad to have contributed the same for this launch. At Godrej, we are proudly committed to the cause of driving indigenous manufacturing for India’s space programmes, which are key to propel India’s technological prowess on the global stage.”

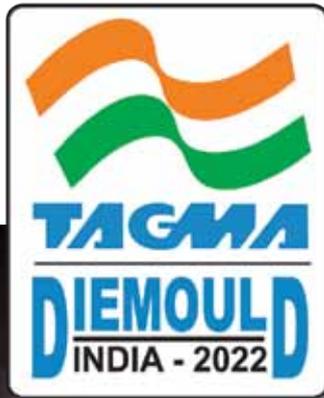
**Surendra M Vaidya,
EVP & Business Head, Godrej Aerospace**

▶ **L&T manufactures K9 VAJRA-T guns for Ministry of Defence**

L&T Defence is currently producing the ‘K9 VAJRA-T’ 155mm/52 calibre tracked, self-propelled Howitzer Guns under the largest contract awarded to an Indian private company by the Ministry of Defence, through global competitive bidding. The ‘K9 VAJRA-T’ systems are being delivered with more than 80% indigenous work packages and above 50% indigenisation (by value) at the programme level. This involves local production of over 13,000 types of components per gun system through a supply chain of about 1,000 industrial partners, mostly MSMEs, with about 150 of them being from Gujarat, revealed a press release.

“The production of armoured platforms, like the K9 VAJRA, contributes to the Indian economy with a large multiplier effect, creates new job opportunities and plays a significant role in building India’s defence industrial base. With the experience, track record, skills, capabilities and infrastructure that L&T has built at the Armoured Systems Complex in Gujarat, we are ready to develop, qualify and build India’s future armoured platforms for our Armed Forces.”

**J.D. Patil,
Whole-time Director & Senior Executive Vice President (Defence & Smart Technologies),
L&T**



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L&T targeted and took sustained efforts and innovated by indigenising 'K9 VAJRA-T' — right from the first prototype developed for user evaluation trials by utilising basic K9 Thunder from the South Korean Partner Hanwha Systems and indigenously developing and producing 14 critical systems, including the Fire Control System, Direct Fire System, Ammunition Handling System and other environment control and safety systems to suit Indian operating conditions and requirements, added the press release.

Foreign direct investments

According to a government press release, in May 2020, the Government of India had announced: "It has been proposed to enhance the FDI in Defence Sector up to 74% through the Automatic Route for companies seeking new defence industrial license and up to 100% by Government Route wherever it is likely to result in access to modern technology or for other reasons to be recorded." The move is part of the reforms in the defence sector to boost self-reliance and promote the 'Make in India' mission. Besides, FDI can help domestic companies gain access to global state-of-the-art technologies and an understanding of international business best practices. The policy reforms are already attracting lucrative FDI opportunities. Here are some of them:

▶▶ **BDL and Thales sign agreement to manufacture STARStreak Air Defence System in India**

Bharat Dynamics Limited (BDL) and Thales, in January, signed a Teaming Agreement to work in partnership on the STARStreak Air Defence system with the support of both the Governments of India and the United Kingdom, said a BDL press release. BDL will become a part of the STARStreak global supply chain, providing the opportunity for export of the system to existing and future STARStreak Air Defence customers, including the UK Armed Forces, through this agreement. Alex Cresswell, CEO, Thales, the UK, said that the BDL manufactured system will be exported to various countries, including the UK, it added.

The STARStreak Missile System is in service in the British Army and has been procured by defence forces worldwide. The fastest missile in its category, STARStreak is unique due to its three laser-guided darts, which

cannot be jammed by any known countermeasure. It has the capability to defeat any air target – even armoured helicopters – as the last line of defence, highlighted the press release.

Partnership between Thales and BDL in this project with Transfer of Technology for STARStreak will create a new business opportunity for BDL and its supply chain partners in India. BDL will be able to enhance its footprints in the export market in addition to domestic market with this new business opportunity. The Government of India's 'Make in India' programme, the ease of doing business and the recent 'Atmanirbhar Bharat' initiatives have created a congenial ecosystem for the foreign OEMs to tie up with Indian industries, like BDL, to establish the production facility in India."

**Commodore Siddharth Mishra (Retd),
CMD, BDL**

▶▶ **BDL gears up to take up Akash export orders**

After the Union Cabinet's clearance, Bharat Dynamics Limited (BDL) is set to export the Akash Weapon System, a press statement issued by BDL informed. The missile being offered for exports will be of a different version. The Akash Weapon System, designed and developed by DRDO, with 96% indigenous content, is being manufactured by BDL at its Hyderabad unit with a large number of supply chain partners, which include DPSUs, MSMEs and private industry, it added.

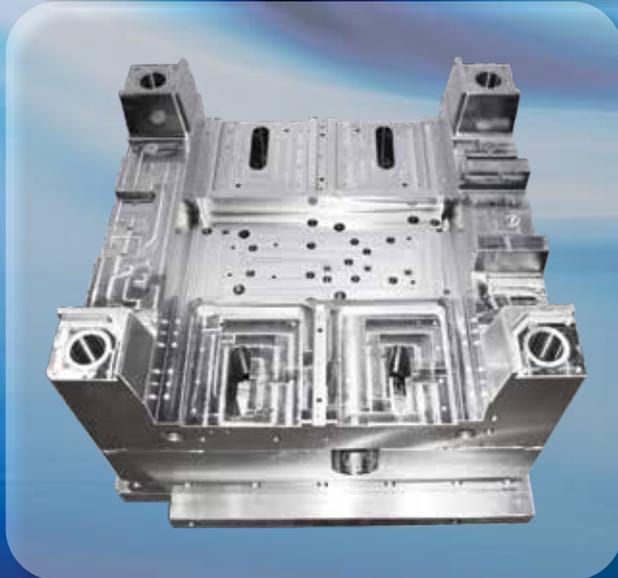
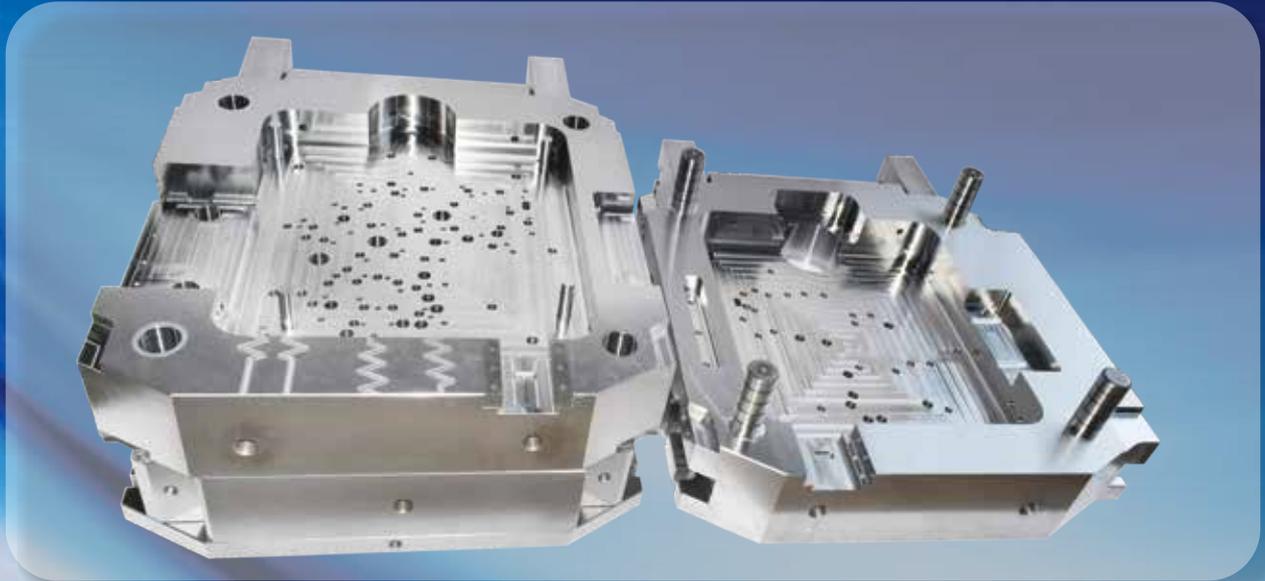
According to the press statement, the Akash Missile has the capability to engage aerial threats up to a maximum range of 25 km and up to an altitude of 18 km, operating at a speed range of 1.8 to 2.5 Mach. BDL-manufactured Akash Missiles are already in the inventory of the Indian Army as well as Indian Air Force.

The company has received export leads for the Akash Weapon System. Now, with the export clearance accorded by the Government of India, BDL is set to expand its customer base in the international market. The company is confident of meeting the export demand, in addition to meeting requirements of the Indian Armed Forces, as BDL has adequate established production facilities."

**Commodore Siddharth Mishra (Retd),
CMD, BDL**

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“We are looking at setting up maintenance facilities in Malaysia, Vietnam, Indonesia, and Sri Lanka. We can give them a lot of support, as these countries use platforms similar to those in India, and their serviceability needs considerable improvement... We are looking at exports quite seriously. A sizeable number of countries are showing a lot of interest in the platforms we are producing, as they are world class. We are in talks with so many countries.”

R. Madhavan,
Chairman and Managing Director, HAL

▶ **Lockheed Martin signs agreement with HAL**

According to a PTI News report, US defence major Lockheed Martin recently said it signed an agreement with Hindustan Aeronautics Limited (HAL) to explore potential industrial collaboration in India's aerospace sector. “We are excited to explore potential opportunities with HAL, one of the largest aerospace companies in Asia,” said J. R. McDonald, Vice President of Business Development - Integrated Fighter Group of Lockheed Martin.

R Madhavan, Chairman and Managing Director of HAL, said his organisation is looking forward to working with Lockheed Martin in exploring opportunities in the domestic and international markets, added the report.

“We are committed to continuing to integrate the Indian industry into our aerospace and defence ecosystem and demonstrating Lockheed Martin's commitment to India now and in the decades to come.”

J. R. McDonald,
Vice President of Business Development -
Integrated Fighter Group of Lockheed Martin

▶ **HAL plans to set up logistics bases in Malaysia, Vietnam, Indonesia and Sri Lanka**

Recently, Hindustan Aeronautics Ltd (HAL) was looking at setting up logistics bases in Malaysia, Vietnam, Indonesia and Sri Lanka, as part of initiatives to entice other countries to buy light combat aircraft - Tejas, and military helicopters. The company is considering setting up maintenance facilities in these four countries, as having logistics bases is key to sell the products and ensure after-sales services, said a PTI news report.

Tejas has been developed by the Aeronautical Development Agency and HAL. Tejas is a four-and-a-half generation fighter jet, which can compete with some of the famous military jets in its class, added the news report.

▶ **Tata acquires IP rights to manufacture military aircraft in India**

After acquiring intellectual property rights for a German-origin platform, the Tata Group will develop and manufacture a military aircraft in India, reported the Economic Times. According to the news report, “it plans to integrate indigenous sensors and payloads to convert it into an intelligence gathering asset”.

“The high-altitude, twin-engine aircraft, capable of playing multiple roles from signal intelligence to cross-border surveillance, is currently in the final stages of testing in Germany,” stated the news report.

Spot the opportunities

Over the years, India has built on its manufacturing proficiency, R&D abilities, IT and engineering services, and semi-skilled and skilled manpower. However, manufacturing in the aerospace and defence industries is far more complex as it involves the manufacturing of difficult-to-manufacture, intricate and tight-tolerance critical parts. These mandate that toolmakers furnish their tool rooms with highly advanced multi-axis CNC machines, and CNC tube bending machines, among other state-of-the-art equipment, to achieve high-precision machining and accuracy of components in aluminium, and other hard metals such as titanium. To be eligible to manufacture for the defence and aerospace industries, the tooling industry will also have to obtain the necessary certifications to ensure the quality, conformity, safety, airworthiness and reliability of the manufactured product. Besides this, it is mandatory that the tooling industry equips itself with highly skilled machinists to ensure that the job is done right.

The aerospace and defence industries have put forth a possibility of opportunities for domestic as well as international companies. Opportunities await entrepreneurs looking to venture into this sector as well as those who are carving a niche for themselves here. Toolmakers, spread your wings, it's time to take off! 🦋

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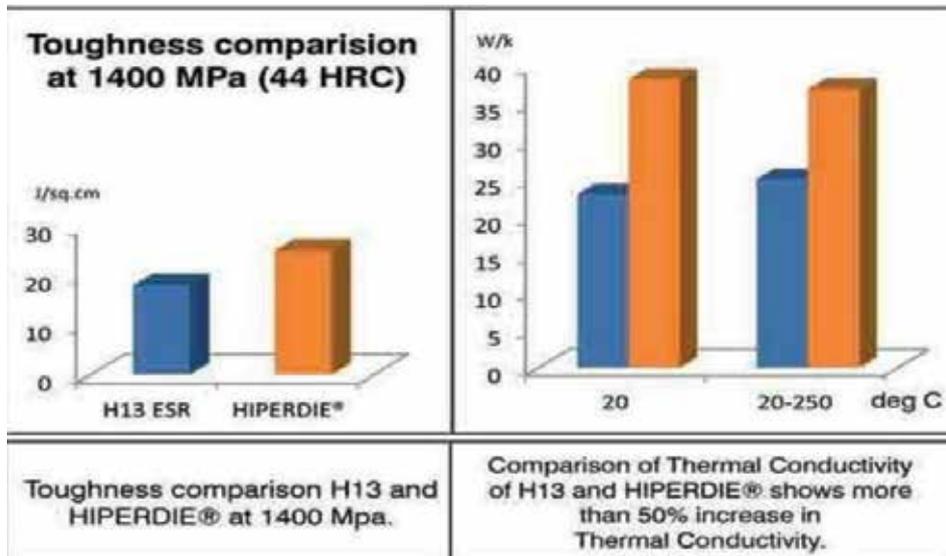
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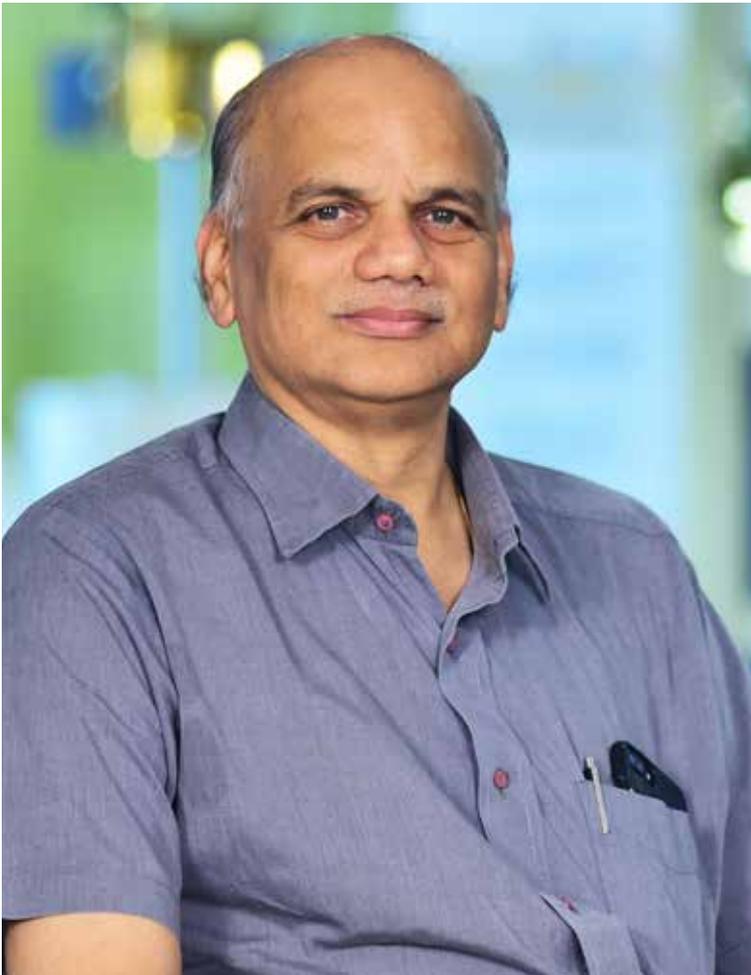


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‘This is the right time for any manufacturing MSME and toolmaker to pitch-in and contribute towards defence production’



Mr. S. M. Vaidya, a veteran in aerospace manufacturing and Executive VP & Business Head - Godrej Aerospace, Godrej & Boyce Mfg. Co. Ltd., has been very active in TAGMA events. He has previously shared his views at the International Tooling Summit 2019 and urged toolmakers to start focussing on the aerospace and defence industries as well. We get another opportunity to discuss the current scenario of the aerospace and defence industries and the opportunities in store for toolmakers.

Nishant Kashyap

Q Please take us through the business operations of Godrej Aerospace.

Our journey in the aerospace business commenced way back in 1985 with the production of critical parts of a launch vehicle and a satellite for ISRO. Housed inside the process equipment business of Godrej & Boyce, we later got attached to the tooling arm and eventually, in 2004, established ourselves as a separate business unit of Godrej & Boyce known as Godrej Aerospace. Our business operations span three distinct areas of space, defence and aviation, the latter being focussed on exports. The projects under the space vertical are further segmented across the launch vehicle, the payload and the land-based systems for communication/ control.

Under the defence vertical, which initiated with DRDO, we contribute to missiles, fighter jets and helicopters, while actively participating in the upcoming projects such as UAV and guided/ unguided bombs. In aviation, the requirements for both civil and military aircraft are being met. So, as is evident, Godrej Aerospace is proudly serving all segments of the aerospace industry.

Q What are your views on the Indian aerospace industry?

In the 1960s, organisations such as ISRO, DRDO, DAE, HAL, and BEL, among others, were setup. Today, they are well experienced in critical and specialised fabrication. In the last 50 years, whether it is the space programme, the defence programme or the nuclear programme, these Indian organisations have established themselves as a great R&D base and have gained global recognition. Now, they are accelerating in their respective areas of expertise. Take, for instance, ISRO. Formerly, ISRO was capable of launching around 4-5 satellites in a year. Now, it has increased its capacity to almost 8-10 satellites in a year. I'm certain that in the coming years, it will launch at least 12 in a year.

Similar events are happening in the defence sector. Earlier, Indian manufacturers faced

Leader Speak

challenges in getting accepted by end users for their missiles and fighter jets. But now, all the three armed forces are using missiles and fighter jets made by DRDO and the other supportive organisations. The missiles have already been inducted in large numbers and with Tejas, and other fighter jets, the Indian armed forces will possess good content of Indian-made fighter jets as well.

In the civil aviation sector as well, the government has launched many programmes, which will further boost the Indian aerospace industry. All these factors, along with the movement from large aerospace OEMs and technology suppliers, will make India a lucrative destination for component suppliers.

Q How will these developments impact the Indian aerospace industry and component providers?

I believe that all the component and technology provider companies will have tremendous opportunities in the aerospace industry. In the Society of Indian Aerospace Technologies and Industries (SIATI), many small and medium industries have sprung up and are serving large aerospace companies. There is a huge requirement for aerospace component manufacturing in India and small and medium enterprises should make the most of this opportunity by taking away that burden from large players. What the automotive industry looked like about two decades ago is what the aerospace industry looks like today. Take the example of Godrej. When we started making the BrahMos airframe, the Vikas engine or the

Cryogenic engine, we were doing everything in-house. Today, we have hundreds of sub-contractors. This has proved to be beneficial to both us and them, as we can focus on design and R&D aspects, while these companies can help us manufacture components.

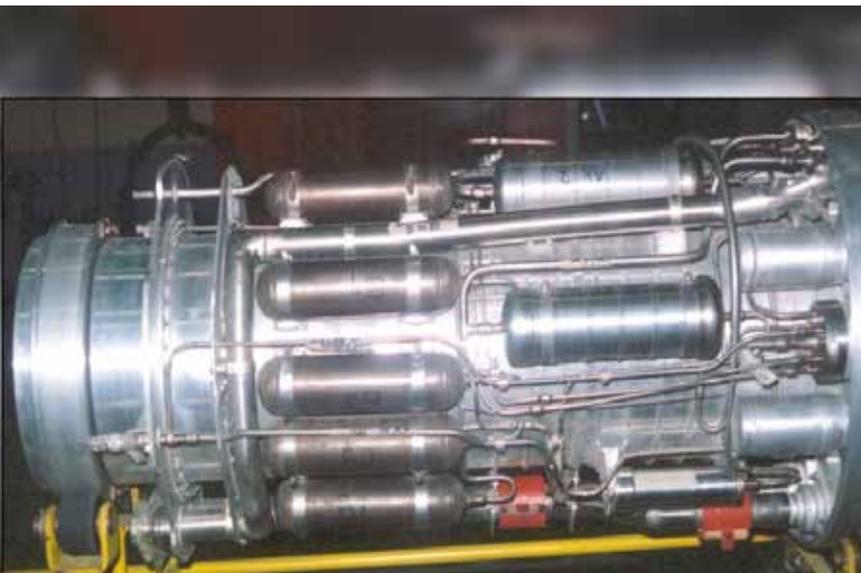
Q Does this imply that Indian component providers, die mould manufacturers and machine tool companies are fully equipped to serve the demands of the aerospace industry?

Frankly speaking, no! But that's exactly why we organise programmes where we engage with them, tell them about the latest happenings and teach them new technologies and manufacturing methods. With the aerospace industry size being small in the past and many other industries requiring service, the experience in the Indian component industry with regards to aerospace was always limited. Also, the aerospace industry is a very peculiar industry with very high entry barriers and the need for a lot of certifications and qualifications even before one can start production. So, we facilitate these companies to get past this phase, which is very time consuming and costs a lot of money.

The precision requirement in the aerospace industry is naturally very high. There is absolutely zero tolerance for mistakes; every component must be 100% perfect. Hence, the availability of technologies and awareness about the manufacturing practices is also one of the grey areas.

Q How could the tooling industry equip itself to rise up to this challenge?

I believe that the defence sector accords immense importance to the quality of tools, jigs and fixtures. In the aerospace industry, full traceability and absolute control over dimensions are essential, which can be achieved only with high-quality tools. There is no room for correction; everything must be obtained in the first attempt itself. However, if it needs to be attempted at all, simulation and validation on mock up is the only way to go about it. This method is extremely expensive and hence, such assemblies are not accepted for flights, but it can be used for ground tests. That's why, a lot of emphasis has been given to assembling tools, jigs and fixtures.



Godrej Aerospace manufactures complex airframes systems for defence applications.



Godrej Aerospace is the sole manufacturer of Liquid Engines for Space Launch Vehicles for the Indian Space Research Organization along with its consortium partner.

Q The Government of India has introduced several policy reforms in the past year. What opportunities do these reforms present to Indian MSMEs in defence manufacturing?

This is the right time for any manufacturing MSME and toolmaker to pitch-in and contribute towards defence production. The government and Ministry of Defence (MoD) are very keen on promoting indigenous production through campaigns like, 'Make in India' and 'Atmanirbhar Bharat'. These will ensure volumes over the next 5-8 years, as manufacturers will have the opportunity to tap into projects under the 'Ban' list of imports and those under the 'Make' category, which are estimated at a minimum INR 5,000 crore and above.

Besides, the government is making provisions to offer domestic players full lifecycle support, which means it will ensure post-delivery support and spares. This mode of MRO is extended to existing assets as well. The Indian government and MoD have also published a list of Line Replaceable Unit (LRUs) or Bought outs by Public Sector Units (PSU) and Ordnance Factories (OF), which needs to be indigenised.

The MoD has also published a list of 108 technologies, which DRDO is willing to share with Indian industries on a no-loss, no-profit basis. Additionally, the government has created a technology development fund to

encourage the participation of public/private industries, especially MSMEs, through provision of grants. The 'Make' procedure has also been simplified with provisions for funding of 90% of development cost by the government to the Indian industry. This will assure prefixed business volumes on its successful realisation.

So, you have a market with after-sales lifespan assurance of business. You have access to technology, you have funds to develop technology, and you can experiment with new concepts and try for disruption when you meet requirements of domestic end-users we can export. I think one cannot ask for anything more.

Q Any words of advice for toolmakers?

I feel this is an excellent opportunity for Indian toolmakers. But they must prepare themselves to meet the growing demand. Currently, many Indian toolmakers are not adequately equipped with exotic materials and alloys that the aerospace and defence industries use. We use a lot of titanium-based, nickel-based and aluminium-based materials. Since these alloys are not used much in general engineering, automotive, pharmaceuticals or other industries, I would recommend them to understand the metallurgy of these three materials because that will help them understand the kind of tools, jigs and fixtures required in different operations such as welding, machining and forming. 🇮🇳

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Industry applauds “pro-growth” Budget!



Honourable Finance Minister Mrs. Nirmala Sitharaman presented the first-ever digital Budget on February 21, 2021. The Union Budget 2021-22 rests on six broad pillars, namely, Health and Wellbeing, Physical and Financial Capital and Infrastructure, Inclusive Development for Aspirational India, Reinvigorating Human Capital, Innovation and R&D and Minimum Government and Maximum Governance.

As the economy continues to battle the slowdown caused by the pandemic, Union Budget 2021-22 offers a ray of hope to individuals and businesses across sectors. Here's what some Indian business leaders have to say about Union Budget 2021-22.

Union Budget 2021-22

“A budget with the head and the heart in the right place. Growth orientation. Health care and infra the right priorities, a bold step to not increase taxes and plan for 6.8% fiscal deficit. Disinvestment will be key. R&D and Simplifying regulations require perhaps more thrust.”

- Pawan K. Goenka,
Managing Director, Mahindra & Mahindra

“The budget focusses on three broad themes - Remedy the current challenges post-Covid through focus on human health and asset reconstruction. Give a major impetus to infrastructure with a 5-year roadmap for fiscal consolidation. Take bold measures for enhancing efficiency and competitiveness like privatization, competition in power distribution companies, CGD expansion in 100 more districts and enablers like infrastructure financing. A good macro-economic growth will translate to good demand for [the] Auto Sector also.”

-Mr Kenichi Ayukawa,
President, Society of Indian Automobile Manufacturers (SIAM)

“The vision of an ‘Atmanirbhar Bharat’ enshrined in the Union Budget, coupled with the ‘Sankalp’ of ‘Nation-First’ will be the bedrock to propel us further as we redefine our economy in a post-pandemic world. Significant outlay for vaccination in the country will add to the confidence of a resurgent India. Announcements with regards [to] increased spend on road infrastructure, voluntary scrappage policy, Research & Development and PLI among others, augur well for the automotive sector. Further, continued focus on building rural and agricultural infrastructure and prioritizing agriculture credit growth will have long-term positive impact on rural demand for vehicles. Increase in basic customs duty on select auto components will encourage local manufacturing of such items. It is also heartening that the budget outlay for the MSME sector has been doubled compared to last year. The auto component industry is dominated by MSMEs and this will provide them the necessary succour as the industry recovers.”

- Deepak Jain,
President, Automotive Component Manufacturers Association of India (ACMA)

“This year’s budget is presented during unprecedented time as mentioned by Hon. Finance Minister Nirmala Sitharaman. As expected it aims to give a boost to [the] economy by increasing expenditure in many sectors. Hence Fiscal deficit of 6.8% looks difficult but it is achievable through ambitious divestment program announced in the budget. Focus on health by providing ₹64000 Crores for ‘Swastha Bharat’ is a good move. Provision of ₹35000 Crores for vaccination is also a very good step. On [the] Industrial front, extending the already announced Production Linked Incentive Scheme for electronics sector to 13 more additional sectors by providing ₹1.97 lakh crores over 5 years is a really welcome and great move to support [the] ‘Aatmanirbhar Bharat’ initiative to increase domestic manufacturing. This will give a strong push to grow manufacturing sector and create job opportunities. Mitra scheme for creating world class companies in Textile field will help grow textile exports. Voluntary vehicles scrapping scheme is also very good for [the] automotive sector which was long awaited. Overall I feel the budget is in the right direction to get our economy back on track to take India to 5 Trillion Economy.”

-Vikas Khanvelkar,
MD, DesignTech Systems

“The long-awaited voluntary scrapping policy can help take older vehicles off the roads thus contributing to lower fuel consumption and pollution and also generating additional demand for cleaner new vehicles. The auto sector welcomes this announcement and is hopeful that for realising full benefits there will be an early implementation of this policy in its totality. Further, at Toyota Kirloskar Motor, we have continuously worked towards creating a self-reliant and competitive local manufacturing ecosystem. We are eagerly looking forward to the details of the Production Linked Incentive scheme that can potentially make India a part of the global supply chain for both traditional and advanced automotive technologies.”

- Vikram Kirloskar,
Vice Chairman, Toyota Kirloskar Motor

Union Budget 2021-22

“Budget Allocation for FY 2021-22 for the MSME more than doubled to ₹15700 crore vis-a-vis ₹7572 crore in 2020-21 (para 114). ₹10000 crore corpus for provision of guarantee for borrowings - a huge relief to the sector. Provisions for earlier announced ‘Atmanirbhar’ schemes (viz. Credit Guarantee Scheme for Subordinate Debt to MSMEs and Fund of Funds) to provide much needed financial succour and accessibility.”

**- Ministry of Micro, Small & Medium Enterprises
Government of India**

“Ola welcomes a progressive and growth-oriented budget. Measures under [the] ‘Atmanirbhar’ Mission will help create global champions in automobiles, financial services and technology and foster an environment where India becomes integral to global supply chains. Increased investment in insurance and infrastructure will open new avenues of capital. Improvement in ease of business will transform India into a global innovation hub. We strongly support the government’s clean air focus with our EV plans that will accelerate the world’s transition to sustainable mobility.”

- Bhavish Aggarwal,
Chairman & Group CEO, Ola

“Government’s reconsideration of Custom Duty Policy aimed at promoting domestic manufacturing is a highly welcome move. Inverted duty structure in the tyre industry has created an uneven playing field and we look forward to the new customs duty structure which will be put in place by Oct 2021. Allocation of ₹18K crore to support augmentation of public bus transport services will have a multiplier effect giving a fillip to the tyre sector as well. Creation of a dedicated Development Finance Institution (DFI) is a very significant move as long gestation infra funding needs long term commitment. In this context, the launch of National Asset Monetisation Pipeline will augment the revenues of the government to fund new infra projects. As for wheels of the nation, the Tyre industry is all set with increased capacities to aid in the infra development.”

- K. M. Mammen,
Chairman,
Automotive Tyre Manufacturers’ Association
(ATMA)

“We welcome the announcement on voluntary scrappage policy and it’s likely to increase demand for new commercial vehicles (CVs) and Passenger vehicles (PVs). Scrappage policy though voluntary will likely become mandatory as fitness certificate will be made mandatory. It’s a soft step towards coming up with mandatory. In dearth of proper infrastructure, just introduction of a fitness certificate may not be enough. The government will also need to build the necessary infrastructure to get this to action on ground. A strong push in Infrastructure building – roads, railways, economic corridors – will help boost demand for heavy & medium duty CVs. With government’s higher focus on metro and increase in outlay for Urban transport we are likely to see the much-needed demand for buses and smaller vehicles for last mile connectivity.”

- Rajeesh Singh,
Partner, Automotive Leader, Deloitte India

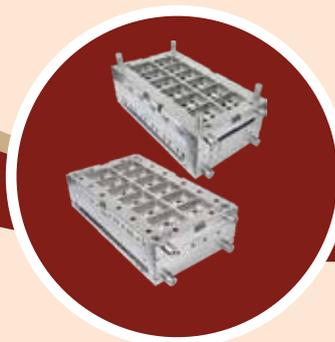
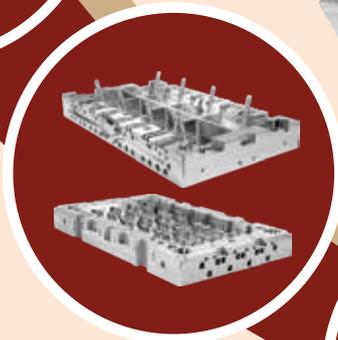
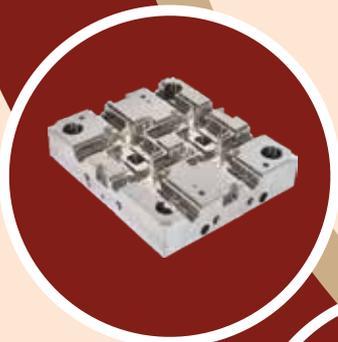
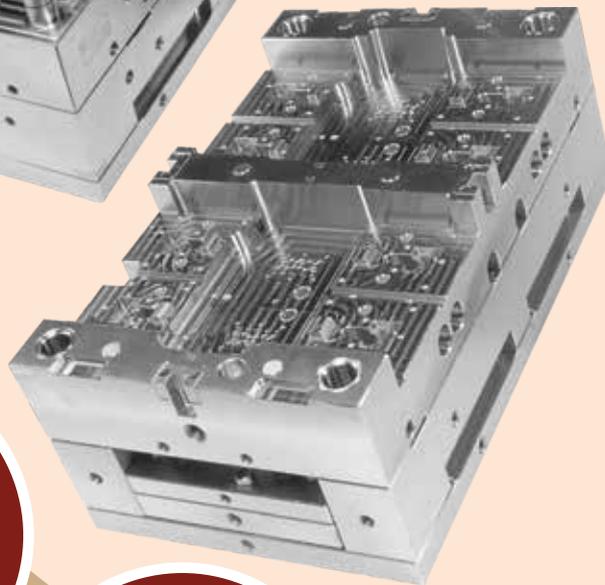
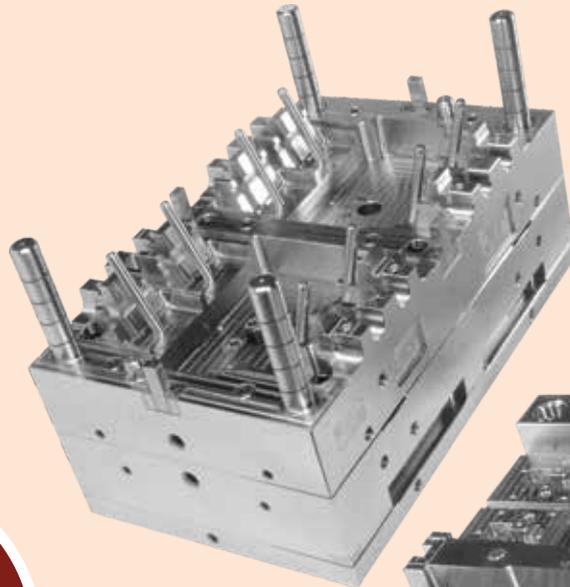
Verdict:

Many consider Union Budget 2021-22 as progressive and bold. It has many policies such as automotive scrappage, doubling the budget for MSMEs, custom duty policy to enhance the domestic output, accelerate the adoption of EVs, credit guaranty schemes for MSMEs and high impetus on infrastructure and agriculture projects. These policies are likely to further boost the economy. Apart from this, the Budget has laid emphasis on increasing capital expenditure, raising allocation for healthcare capacity building and development of agriculture infrastructure, among others, which are expected to have a multiplier effect on the economy. Overall, Budget 2021-22 seems to be promising and is likely to help the Indian economy grow after a very challenging 2020.

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On the path toward zero-defect production with Bosch AI



More precise than any eye or ear, faster than any mind: artificial intelligence captures and processes terabytes of data in a matter of seconds, helping humans understand complex relationships at a glance and take action. The Bosch Center for Artificial Intelligence (BCAI) has developed an AI-based system that detects anomalies and malfunctions in the manufacturing process at an early stage, reliably reduces reject parts, and improves product quality. Speaking at Bosch's digital AI conference 'AI CON' held in March, Bosch CDO/CTO Dr. Michael Bolle said: "The use of artificial intelligence will make factories more efficient, more productive, more eco-friendly

– and will make products even better. Our new AI solution will save plants millions in costs."

Pilot plants, where the AI solution is already in use, are saving between one and two million euros per year. The plant in Hildesheim, Germany, for example, was able to identify and eliminate disruptions in process flows with the help of AI. As a result, the cycle times of the lines dropped by 15 percent. Studies have confirmed that the AI effect: Industry 4.0, in particular, would benefit from the widespread use of AI in Germany. Spread across various industries, the greatest cost-saving potential – more than 50 percent (182 billion euros) – is to be found in AI-assisted

Tech Know-how

“The use of artificial intelligence will make factories more efficient, more productive, more eco-friendly – and will make products even better. Our new AI solution will save plants millions in costs.”

Dr. Michael Bolle, CDO/CTO, Bosch

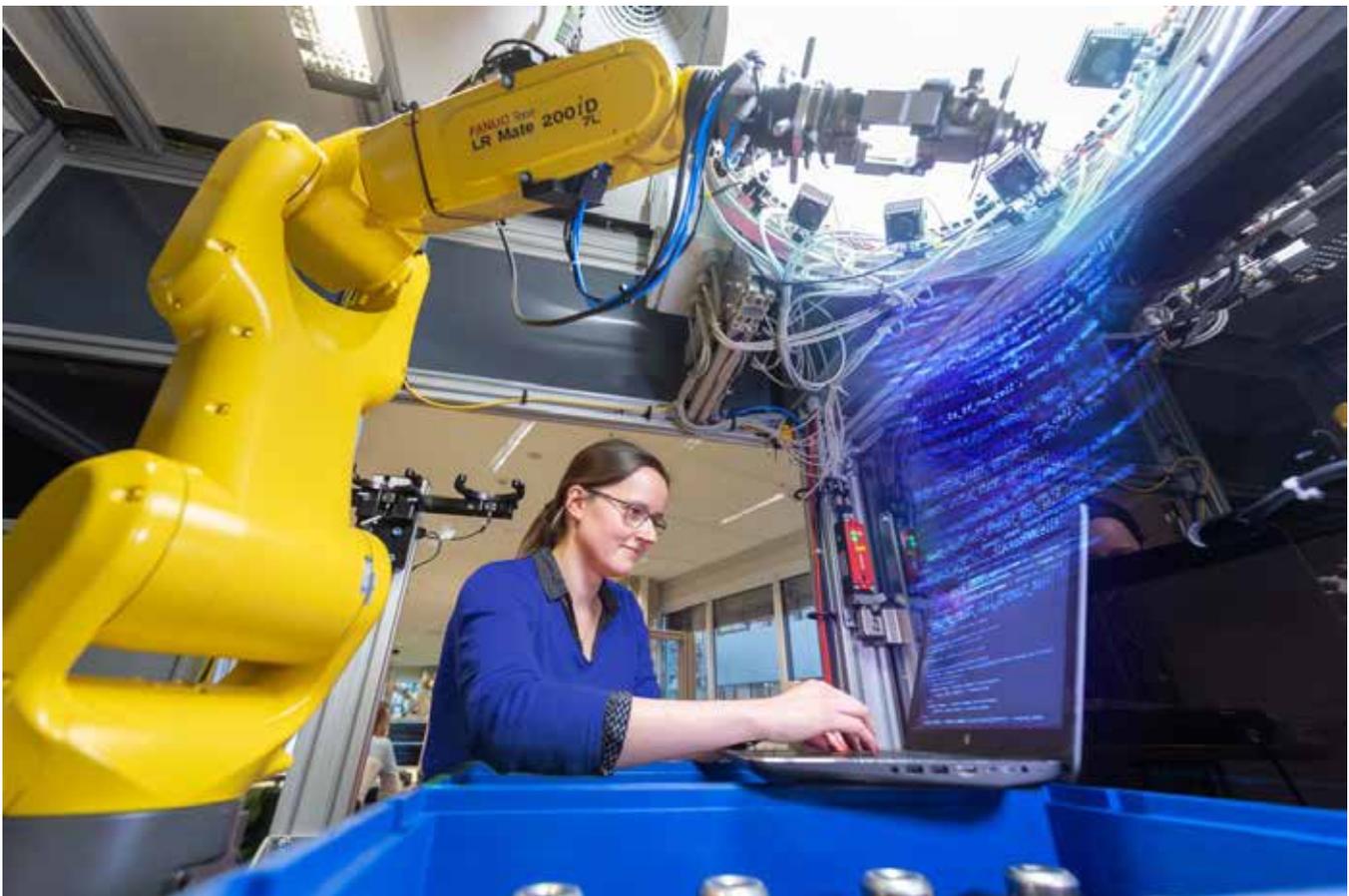
production (source: eco - Association of the Internet Industry and Arthur D. Little, 2019). In 2021, Bosch will be rolling out the AI solution developed by BCAI, starting with some 50 powertrain plants worldwide, and connecting it to more than 800 production lines. More than one billion data messages will be stored on the analysis platform every day. Bosch plans to subsequently deploy the AI solution across the company at its roughly 240 plants. The company will also take the experience and technological know-how it gains and incorporate it into the development of new AI technology for manufacturing.

Bosch AI improves production and product

The pilot user of the new AI analysis platform is Bosch's Mobility Solutions business sector. Over the next few years, Bosch will invest some 500 million euros in bringing digitalisation and connectivity to its plants.



The expected saving will be twice as high: roughly one billion euros by 2025. An integral part of the project is the use of artificial intelligence. Collaboration between BCAI and the division's plants has resulted in a universal AI solution for manufacturing that uses Bosch Connected Industry's Nexeed Manufacturing Execution System (MES) to automatically collect, process, and analyse data from a variety of sources in near real time. Sensor data from machines serves as



“Artificial intelligence is an epoch-making technology, comparable to the invention of letterpress. It will revolutionise manufacturing. With the help of artificial intelligence, machines and products learn how to be smart and anticipate.”

Dr. Michael Bolle, CDO/CTO, Bosch

the basis for, say, determining fluctuations in a wide range of manufacturing processes.

The Industry 4.0 software, Nexeed, “translates” and visualises the data and codes, the AI system makes a recommendation for action, and the associate decides how to proceed. The main tools in this process are dashboards, individually configured and tailored to local use cases and the corresponding AI analysis. This setup makes it easier to find potential causes of errors. Self-adapting processes for machines and assembly lines can be integrated as well. If, for example, a drill hole deviates from the defined placement, the AI system independently initiates the necessary steps. At times, the AI system receives support from cameras that are positioned along the production lines and record the manufacturing process. On the basis of patterns it has learned, the system identifies deviations, and action can be taken immediately. In addition, field and customer data is linked to the platform in individual cases. This helps the system understand even better how products behave in the field, enabling it to detect defects in good time and predict impending failures.

Bosch uses AI to unlock manufacturing potential

While the manufacturing industry has grasped the situation in theory, it is still lagging behind in



practice: more than half of all German companies (58 percent) see disruptive potential in artificial intelligence, but only one in seven (14 percent) is currently using AI for Industry 4.0 (Bitkom, 2020). A clear majority of Germans (60 percent) would like to see AI used more in industry, in sectors such as automaking or aircraft-building. This is a core finding of the Bosch AI Future Compass. Presented in November 2020, the study indicated that more than two-thirds of respondents would welcome the use of AI in diagnosing machine faults and in other high-tech areas.

Bosch is already fully committed to artificial intelligence. In manufacturing operations, the technology helps reduce rejects, improves the utilisation of machines and systems, and optimises production processes. “Artificial intelligence is an epoch-making technology, comparable to the invention of letterpress. It will revolutionise manufacturing. With the help of artificial intelligence, machines and products learn how to be smart and anticipate,” Bolle says. In addition to projects in its own plants, Bosch is launching AI-based solutions on the market. Applications in manufacturing include automated visual inspection of workpieces, software for intelligent production management, and sophisticated energy management.

Bosch anchors artificial intelligence in its corporate strategy

Bosch regards artificial intelligence as a key technology. By 2025, the aim is for all Bosch products to either contain AI or have been developed or manufactured with its help. To this end, the company is investing in bright minds, appropriate infrastructure, and suitable conditions. Bosch aims to train 20,000 associates in AI by the end of 2022. One key lever here is its research and development centre for artificial intelligence, BCAI. Just three years after it was set up, BCAI had earned back its initial investment: its contribution to result is now some 300 million euros. Bosch’s objective: “We research and offer AI that is safe, robust, and explainable,” Bolle says.

The company is primarily concerned with industrial AI – the connection between artificial intelligence and the physical world, in other words. Bosch has excellent prospects in this area. “Our plants manufacture a wide variety of products – from refrigerators and power tools to powertrains and assistance systems for the automotive industry and automation technology for use in factories. We are now adding AI algorithms to this expertise,” Bolle explains. 🌈



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Aero India 2021 gets off to a flying start



Image used for representation only. Courtesy: Envato Elements

The inaugural ceremony for Aero India 2021, Asia's largest aerospace and defence exhibition, was held at Air Force Station, Yelahanka, Bengaluru, between February 3 and 5, 2021. This year, Aero India 2021 was organised in hybrid mode with a concurrent virtual exhibition to encourage maximum participation.

Flagging off

Opening the proceedings, Secretary (Defence Production) Shri Raj Kumar addressed the gathering and said that India has taken a leap in organising a completely COVID-compliant aerospace and defence exhibition. He expressed his gratitude to ambassadors and delegates from more than 55 nations, who were in attendance. Shri Raj Kumar said

that the large attendance at Aero India 2021 reflects the positive temperament of people across the world and renewed global interest in the capabilities of India. He said that Aero India 2021 would provide a platform for the exchange of ideas and forge partnerships in the aerospace and defence sectors. He also provided a brief about the events organised during Aero India 2021, including the 'Chief of Air Staffs Conclave', the 'Bandhan Ceremony' and the 'India Pavilion'.

Later, contract documents to produce Light Combat Aircraft (LCA) Tejas were handed over by the Ministry of Defence to Hindustan Aeronautics Limited (HAL). Chairman and Managing Director, HAL, Shri R. Madhavan, presented a model of LCA Tejas to Raksha Mantri Shri Rajnath Singh. This was followed by the screening of a short film on the journey of the aircraft.

'India offers multifarious opportunities'

Addressing the gathering, Raksha Mantri Shri Rajnath Singh expressed his happiness at the attendance of delegates from around the world at Aero India 2021. He said that the existing supply chains developed over the years by aerospace and engineering firms and an investor-friendly government with simplified procedures and single-window clearance mechanism makes Karnataka an attractive destination for the industry. He expressed his gratitude to Chief Minister of Karnataka Shri B. S. Yediyurappa for extending full support in organising Aero India 2021.

Speaking on Aero India 2021, Shri Rajnath Singh said that the exhibition displayed the vast potential and multifarious opportunities that our country offers in the defence and aerospace sectors. He added that it promises to be the world's first-ever hybrid aero and defence exhibition with a concurrent virtual exhibition, making it a truly digital and global event.

Event Report

The Raksha Mantri appreciated the growing optimism of the global community, reflected in the participation of over 540 exhibitors, including 80 foreign companies and defence ministers, delegates, service chiefs and officials from more than 55 nations. He highlighted that the unique opportunity in defence and aerospace manufacturing that India offers is through a “sangam” of rising demand, greater innovation, conducive policies and maturing ecosystem in the sector.

Government reforms

Shri Rajnath Singh also announced that the government plans to spend 130 billion dollars on military modernisation over the next seven years. He said that steps had been taken to strengthen the nation's security apparatus with domestic manufacturing and complex defence platforms becoming the focus of the 'Atmanirbhar' Policy. He said that the government had enhanced Foreign Direct Investment (FDI) in the defence sector up to 74 per cent through the automatic route and 100 per cent through the government route. Hailing the reforms brought in by the government since 2014, he said that they would create a conducive system for exports, FDI and offset discharge. The newly introduced (Buy Global-Manufacture in India) category of capital procurement in Defence Acquisition Policy 2020 allows outright purchase of equipment from foreign vendors and indigenous manufacture through an Indian subsidiary, a joint venture or an Indian agency. He said a large number of indigenous defence equipment had been developed by Defence Research and Development Organisation (DRDO) to cater to the needs of the nation's defence forces.

Raksha Mantri informed that reforms aimed at bringing ease in doing business, have shown good results. India has jumped from 77th rank in 2019 to the 63rd rank in the World Bank's 'Ease of Doing Business Rankings'. He added that industrial licensing requirements have been eliminated for a number of items in the defence sector. More than 500 companies have now taken defence licences, doubling the number in the last six years. Shri Rajnath Singh invited business leaders from across the globe to take advantage of the various initiatives of the Government of India and set up manufacturing units.

Journey towards a self-reliant India

Shri Rajnath Singh said that the India pavilion at Aero India 2021 would showcase India's design and manufacturing supply chain associated with various facets of the rotary wing system. Raksha Mantri expressed great happiness that HAL got the orders for 83 new indigenous LCA - Tejas MK1A for Indian Air Force valued at more than INR 48,000 crore, the biggest 'Make in India' defence contract till date. He said with a strong and diversified Micro, Small, Medium Enterprise (MSME) sector composed of more than 5,000 active units, India has the potential to become a reliable supplier of defence equipment to many of its friendly nations.

Raksha Mantri shared the vision of making India one of the biggest countries of the world in the defence sector, from design to production, with the active participation of the public and private sectors. He said that to achieve the twin goals of self-reliance and exports, we have set a target to achieve INR 1,75,000 crore turnover, including the export of INR 35,000 crore in aerospace and defence goods and services by 2024. Shri Rajnath Singh recognised India's interests beyond its shores and said that it was India's duty to remain capable and willing to assist them in times of natural calamities and security challenges. He expressed happiness at the organisation of the first Indian Ocean Region's Defence Ministers' Conclave with the theme 'Enhanced peace, security and cooperation in the Indian Ocean Region' in this edition of Aero India. He said that this was an implementation of the concept of the Indian Ocean built around Security and Growth for All in the Region (SAGAR), visualised during Prime Minister Narendra Modi's visit to Indian Ocean Island states in 2015.

Raksha Mantri said that India is also a victim of the global threat of state-sponsored and state-inflicted terrorism. He said that the nation has long witnessed attempts by others to change the status quo along our borders. He assured that India is vigilant and



Image Courtesy: Aero India



Image Courtesy: Aero India

prepared to counter and defeat any misadventure as well as to defend its territorial integrity and its people. He said that this resolve is exhibited in India's growing defence capabilities, which will be showcased in Aero India 2021. Raksha Mantri Shri Rajnath Singh concluded his address by declaring Aero India open.

Karnataka's contribution

Chief Minister of Karnataka Shri B. S. Yediyurappa

said it was a matter of pride for people of Karnataka and Bengaluru for being selected to host yet another edition of Aero India. He said that the holding of Aero India this year was an expression of confidence in the ability of the state administration to tackle the COVID-19 pandemic and assured that his government has taken measures to ensure the safety of participants and delegates. The Chief Minister said that Karnataka made a significant contribution to the nation's aerospace and defence sector of India and was the first state to announce an aerospace policy with a proposed investment of close to INR 14,700 crore and employment potential for about 10,600 people. He highlighted the role of Micro, Small and Medium scale enterprises in the growth of the country's industry.

The Chief Minister said that 'Laghu Udyog Bharati' and IMS foundation with the support of Government of Karnataka would be organising the MSME, Aerospace and Defence expo in Bengaluru from September 27 to 29, 2021 to realise the potential of MSMEs and requested the support of the Ministry of Defence in this endeavour. He thanked Raksha Mantri Shri Rajnath Singh for reposing faith in the Karnataka government for Aero India 2021. 🇮🇳

Indian Tool Room Industry Analysis January 2020

TAGMA and Nomura Research Institute Consulting & Solutions conducted a Market Study on Indian Tool Room Industry covering all user segments and understand current market and its evolution over the next 5 years

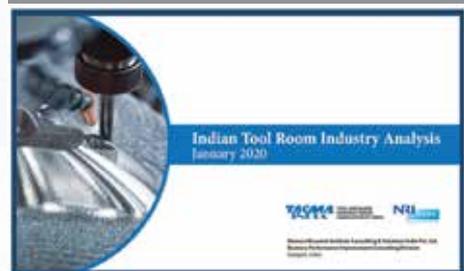
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Truventor.ai joins hands with TAGMA for a webinar on on-demand manufacturing

IN a bid to spread awareness about the concept of on-demand manufacturing (ODM) in India, Truventor.ai, in association with the Tool and Gauge Manufacturers Association India (TAGMA India) organised a webinar on February 2, 2021. The webinar focussed on the advantages of adopting this novel way of manufacturing.

Truventor.ai, a deep-tech-led manufacturing company, provides on-demand, time-flexible, and Capex-free cloud machines for manufacturing. The

concept of on-demand manufacturing, also known as cloud manufacturing, is proven to have helped many customers and suppliers in the developed world with its unique value proposition to the entire ecosystem.

"We see huge potential for Indian SMEs to serve global customers. With the ongoing pandemic, there is supply chain disruption across businesses. Indian SMEs should use this as an opportunity to make a mark in the global manufacturing space," said Soumitra

Joshi, Founder & CEO, Truventor.ai. "On-demand manufacturing can help SMEs get more customers without any extra efforts. With our global connection and deep understanding of the manufacturing industry, we want to help Indian SMEs with export orders. Webinars are a step to reach out to maximum number of suppliers in India."

The event was attended by more than 60 toolmakers, who expressed interest in becoming a manufacturing partner with Truventor.

Webinar on Integrated Tooling Solutions

SAPIENCE Techsystems, a tier-1 partner of Siemens Digital Industry Software and a leading engineering solutions provider in the domain of CAD/CAM, had organised a webinar on Increasing Productivity with Siemens Integrated Tooling Solution.

A live technical demo session hosted on January 19, 2021, was attended by more than 40 industry professionals from the die and mould industry. The session focused on the capabilities of NX integrated solutions that can digitalise the mould designs and manufacturing process and help increase productivity. A live NX environment was showcased to present the state-of-the-art features of the NX integrated tooling solutions.

ZWIndia organises webinar for TAGMA members

ZWINDIA, an innovative provider of CAD/CAM solutions and services (www.zwindia.com), together with its partner SIMCON, held an exclusive webinar for TAGMA members on February 12, 2021. SIMCON, based in Germany, is Europe's leading provider of plastic injection moulding simulation software and has more than 30 years of experience in the complex field of plastic injection moulding. Sebastian Sutter, Head of International Business Development, hosted the online event and talked about mould simulation and optimisation using SIMCON's software, CAMOULD. "CAMOULD makes the design of injection moulded parts and moulds cheaper, faster and more accurate. Customers use simulation to anticipate and solve issues early, already during the design phase. That is how users can cut down on costly physical correction loops, saving time, stress and money," explains Mr. Sutter. "Our customers appreciate CAMOULD's speed and efficiency, how simple it is to learn and use, and the fact that it is fully compatible with all of the leading CAD formats," adds Mr. Sutter. More than 40 participants attended this event and offered excellent feedback.

Mr. Anhubhab Hazra, CEO, ZWIndia, says, "Quality and cost targets in India are tightening. Many designers and toolmakers are exploring broader use of digital tools, to achieve these goals more quickly and efficiently." Therefore, he sees great value in training programmes like this. People need to invest only a small amount of time to learn about the advantages and the ways of working with CAMOULD.



In addition, following the webinar, a tailored CAMOULD bootcamp training was held with 10 participants. They had the opportunity to get an in-depth look into the software and to learn how to use it. "The bootcamp is a great start into simulation. Using examples, you learn everything that you need to get going with your first project," added Hazra.



Welcomes New PATRON Members

ANAND MOULD STEELS PVT. LTD.

Since 1972 ANAND group of companies are in service of Indian Tool room industry. It is more than 3 decade old tradition. We entered Plastic Mould Steel business in 1993, Mahindra Intertrade Ltd., who are regional representatives for India for Schmiedewerke Groditz GmbH- Germany, appointed ANAND STEELS & ALLOYS and now known as Anand Mould Steels Pvt. Ltd. as regional distributors for India. Since then ANAND is reliable partner of Indian Tool room industry. ANAND is one of the top German plastic mould steels and special. The company has warehouse cum cutting facility at Kalamboli, Navi Mumbai, 50 k.m. from Mumbai. It is 10,000 Sq. Ft. warehouse with office, 20 tons EOT Crane, largest band saw cutting facility in the country i.e. 1500x 1250 mm and trained disciplined staff.



Contact Details:

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Email: ashish@anandsteels.com; accounts@anandsteels.com

Website: www.anandsteels.com

Contact Person: Mr. Ashish Bhansali - Managing Director / Sandeep Patil - Manager

Product: Sole Distributor of Schmiedewerke Groditz GmbH for India, Special grades for Plastic Moulds, Diecasting dies -

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Mobile: 9870085200

Email: vishal@purohitsteels.com; Info@purohitsteels.com

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Contact Person: Mr. Vishal Purohit - Director-BD / Mr. Ajit Purohit - Director - Finance

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Vasa Speciality Steels Private Limited is a private company incorporated on 24 June 2019. It is classified as Non-govt company and is registered at Registrar of Companies, Mumbai. Its authorized share capital is ₹150,000 and its paid up capital is ₹150,000. It is involved in Manufacture of Basic Iron & Steel. Vasa Speciality Steels Private Limited's Annual General Meeting (AGM) was last held on N/A and as per records from Ministry of Corporate Affairs (MCA), its balance sheet was last filed on N/A.



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Email: vasaexport@gmail.com; vasaexport@rediffmail.com

Website: www.vasagoc.com

Contact Person: Mr. Hitesh S Vasu - Director / Ms. Mittal Sonetha - Accounts & General Manager

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Patron Members

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Tel: 022 68604999 / **Mobile:** 9820024744/8879640070

Email: tatsu@xceedgroup.in;viral@xceedgroup.in

Website: www.xceedgroup.in

Contact Person: Mr. Viral Shah - Managing Director/

Mr. Tatsu Dharamsey - Commercial Manager

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YUDO HOT RUNNER INDIA PVT. LTD.

YUDO specializes in Hot Runner system, which is the core components of mold, and manufactures all essential parts internally including nozzle, Manifold, Mold Base, Heater, and so on. YUDO manages excellent quality management system through in-house R&D, Design, Manufacturing, Assembly, and Customer Service. It realizes Smart Factory for customer satisfaction with optimizing the overall production process and maximizing efficiency through Integrated Monitoring & Controlling/Business Management System. With a total of 139 global service networks, YUDO has been making every effort to respond quickly to customer requests.



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Email: vishal@yudo.co.in; sales@yudo.co.in

Website: www.yudo.com

Contact Person: Mr. Vishal Agarwal-President

Product: Manifolds, Open Valve / Single Valve / Yuen / Yuma / Mass / Wina / Peta Nozzles, Hot Runner Controllers, Heaters, Thermocouples, Flow Analysis, Modu System, Eco Modu System.

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ZAHORANSKY design and manufacture of precision injection moulds for thermoplastic injection moulded components. The company also design and manufacture SPM's for the brush industry. ZAHORANSKY is Specialist Mould Maker for Toothbrush and Oral care products, Caps and Closures (FMCG) and Medical components.



Contact Details:

SF No. 66/1A, 1B2-3D, 67/1A2, 3A, Kuppepalayam Village, Coimbatore – 641107, Tamil Nadu

Tel: 0422-2978787 / **Mobile:** 9791906183 / 9791906190

Email: arvind.chawla@zahoransky.com;

muralidhar.noorni@zahoransky.com

Website: www.zahoransky.com

Contact Person: Mr.Arvind Chawla - Managing Director /

Muralidhar Noorni - Project Manager

Product: 1. Design and manufacture of Precision injection moulds for thermoplastic injection moulded components.
2. Design and manufacture of SPM's for the brush industry.
3. Specialist Mould Maker for Toothbrush and Oral care products, Caps and Closures (FMCG) and Medical components.

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- ▶▶ Special rates for TAGMA members participating in Exhibition, Conference and Seminar organised by TAGMA.
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- ▶▶ Has been facilitators for Joint Ventures by providing access to members details on TAGMA website thereby generating online enquiries and also by circulating outsourcing enquiries thru email.
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- ▶▶ Access to Members section of TAGMA website having following features:
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In addition to benefits to Ordinary Member a Patron Member will be entitled for following benefits:

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- ▶▶ One page advt. each in Exhibition (even years) and Conference (every year) Special Issue of TAGMA TIMES.
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Website: www.sharpedgetech.co.in

Contact Person: Mr. Shriniwas Karande

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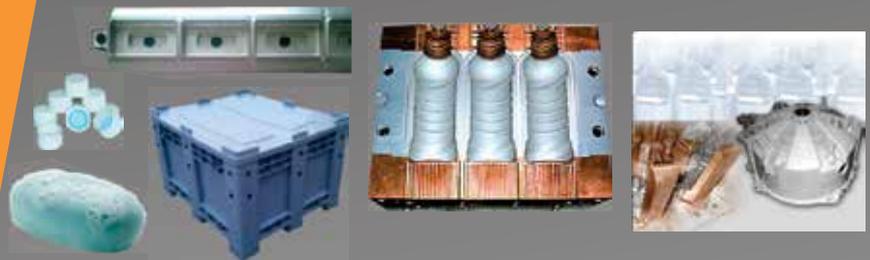
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