

Government of India
Department of Heavy Industry
Ministry of Heavy Industry and Public Enterprises

Report on Participation of Department of Heavy Industry at Hannover Messe during 24—
27th April 2016 led by Secretary (Department of Heavy Industry)

Report brief

India participated as Partner Country in 2015 edition of Hannover Messe. India's participation based on the theme "Make in India" saw a spectacular participation of more than 350 Indian companies, 8 central ministries and departments, 12 states from India and 120 top CEOs. The Indian delegation was led by Hon'ble Prime Minister of India Mr. Narendra Modi. 8 sectoral seminars were also organised during the show. Department of Heavy Industry, GOI participated in the last edition of Hannover Messe. Hannover Messe is the world's largest technology showcase and in order to keep up the momentum and also to explore areas of cooperation between India and Germany, Department of Heavy Industry participated in the 2016 edition of Hannover Messe.

The components of DHI's participation at Hannover Messe 2016 were as follows:

1. High level delegation to be led by Shri Girish Shankar, Secretary , Department of Heavy Industry
2. A central showcase of Indian Capital Goods sector with participation of major PSU's of the department. An area of 90 sqm showcased the various milestones of the Indian capital goods sector showcasing the technical advancements, policy initiatives, thrust on Schemes under the Make in In India initiative.
3. Participation of major PSU's under the department , HEC, HMT & FCRI.
4. Organising a Workshop on "Indo-German Innovation Partnership through Industry 4.0" to
 - Create significant synergies between Indian and German industries for collaboration in innovation through Industry 4.0.
 - Facilitate Trade, Investment & Technology transfer in these areas
5. Signing of MOUs desiring to develop cooperation, Technology transfer & innovation in manufacturing sector

6. Meetings with Czech Industry Ministry side to identify areas of cooperation between the India and Czech side in Capital Goods, Possibilities of New Investments, India Business, Refurbishing of Czech Origin Machine Tools , Supply of New Machine Tools and possibilities of setting up new manufacturing units.
7. Technology scouting and technology trends survey in specific areas

Detailed Report

India has been the Partner Country twice in Hannover Messe, in 2006 with a battalion of 350 Indian companies and in 2015 with 351 exhibitors, which paved the path for transformation of the world's largest democracy into the world's most powerful economy and also presented a unique perspective of India as a vibrant, dynamic modern India with its traditional culture and roots intact. EEPC India played the role of lead agency on both the occasions to mobilise Indian participation at the Messe.

With 10 parallel trade fairs, Hannover Messe covers a wider range of themes and exhibits than any other event. The opportunity to develop new sales leads in other sectors, unique access to new products and technologies and a huge international presence attracts exhibitors from all over the world. Besides being a fair, Hannover is a strong brand appealing to top global players as well as to small and mid-sized enterprise. Hannover Messe is also the initiator of important investments in technology and automation and go through global trends such as sustainability, mobility, urbanisation and the lack of resources. It is a global powerhouse of innovation and investment, the world's number one Technology Expo and the leading dialogue hub for business and government leaders organised by Deutsche Messe AG.

India's participation in the fair in 2015 was based on the Make in India theme with extensive branding of the campaign in Hannover city and other fair grounds which aimed to increase the share of manufacturing in India's GDP from the current 16 percent to 25 percent and be a driver for future growth by focusing on 25 key sectors through a multipronged approach aimed at facilitating investment, fostering innovation, enhancing skill development, protecting intellectual property and building world-class manufacturing infrastructure.

Besides participation from Department of Heavy Industry, a sizeable group of 60 Indian companies was taken to Hannover 2016 (under aegis of EEPC India) which was inaugurated by German Chancellor Ms. Angela Merkel and President of USA Mr. Barack Obama. President Obama became the first sitting President of USA to have inaugurated any trade fair with USA being the first Partner Country with over 400 exhibitors.

Industry 4.0 was the focus in Hannover

Around the globe, there is a lot of debate about whether Germany is not only a leading industrial nation, but also a leader in terms of Industry 4.0. This year's HANNOVER MESSE marked A GREAT SUCCESS for Industries 4.0,". "Industry 4.0 is a predominantly German concept which has gained momentum worldwide. Germany is one of India's major trade and investment partners. Germany is the 9th largest trade partner for India. The bilateral trade volume between the two countries USD 20.35 billion during the financial year 2014-15. The German exports to India are dominated by setting up latest steel making units, final production units of steel industry, material handling systems, machinery and engineering. German companies have found India to be a lucrative market which has led to significant investments and partnerships in the field of technology. During 2013, the total FDI inflow into India from Germany stood at USD 23.94 billion and the sector receiving most German FDI remained ICT, a key sector for Industry 4.0.

Industry 4.0 is a way to connect embedded systems production technologies and smart production systems and Germany is an international leader in this field. The country enjoys leading position in security solution and business enterprise software and is a world leader in engineering and smart manufacturing. Germany's embedded systems market generates USD 22.4 billion annually and it is expected to rise to USD 44.88 billion by 2020. Germany's embedded systems market is the third largest globally immediately after USA and Japan. Given this background and the cordial Indo-German trade and investment relationship, Germany is an important partner for India in its path towards greater technology advance and implementation of Industry 4.0.

Several studies by the government have identified sectors where India and Germany can collaborate. A report prepared by E&Y for the embassy of India in Germany specifies certain sectors for Indo German collaboration.

The Department of Heavy Industries in their last working group report also specified a number of areas for technology collaboration with Germany. A list of those areas is given below:

Key sectors for Indo-German collaboration

- a. Automotive sector,
- b. ESDM or Electronic design and manufacturing sector,
- c. Civil aviation and airport,
- d. Space
- e. Transportation infrastructure,
- f. Renewable energy,
- g. Water and energy supply
- h. Heavy engineering sector
- i. Defense

The two sides have already agreed to cooperate in India's 'Digital India' initiative in the light of Industry 4.0. An Indo-German High-Technology Partnership Group (HTPG) is already in place with the aim to deepen cooperation on high technology between India and Germany. Initiatives are also taken to align Indian industry with German R&D giants such as Fraunhofer for strategic cooperation in the field of technology up gradation.

Detailed report of point wise engagements

Day 1 – 25th April 2016

- 1. Workshop on “Indo-German Innovation Partnership through Industry 4.0” held on 25th April 2016.** The workshop aimed to discuss globally advanced manufacturing trends in cutting edge technology for today's industry, use of digital technologies and automated manufacturing, the industrial internet, the Internet of Things and facilitating research and commercialization of technologies in Indian Heavy industries. The workshop aimed to explore building business collaborations through innovation in Indian manufacturing sector.

The tone of the workshop was set by H.E. Mr. Gurjit Singh, Ambassador of India to Germany, Mr. Girish Shankar, Secretary, Department of Heavy Industry, Government of India & Mr. T. S. Bhasin, Chairman, EEPC India. Besides, the session also saw eminent panellists from the Indian and the German side like FICCI, HMT, HEC, GITA, FCRI, HCL, Infosys, TCS, ZVEI, VDMA, E & Y, BVMW, FLIT, IGCC, Steinbeis, & Bosch to name a few. The workshop saw a participation of around 50 participants. The session saw interesting discussion on creating significant synergies between India and Germany for collaboration of Innovation through Industry 4.0.

On this occasion, 2 important MoU were also signed. An MoU was signed between Department of Heavy Industry, Ministry of Industries & Public Enterprises, Government of India & Steinbeis GmbH for desiring to develop cooperation in manufacturing sector. The second MOU was signed between Department of Heavy Industry, Ministry of Industries & Public Enterprises, Government of India, Hannover Milano Fairs India Pvt. Ltd. & FICCI for promoting technology & innovations through WIN India series of events.

2. Inauguration of India Technology Pavilion

Joint inauguration of India Technology Pavilion was organised on 25 April 2016 along with H.E. Ambassador of India to Germany. The pavilion showcased the technology intensive products & services of CSIR, along with other start ups/small scale companies. Many of the companies participating in Indian Technology Pavilion were involved in technologies at the grass root level and in frugal technologies.

3. VIP tour by HMF India to stalls of major German / USA companies

In order to discuss mutual areas of cooperation between India and Germany in areas of technology upgradation and in order to strengthen the capacity of the Indian capital goods sector, meetings were organized with top MNC's also having operations in India. Visits were organised to stalls of few companies like BeckhoffAutomation, Siemens, LAPP group etc. These are manufacturing giants working in the area of industrial automation, motion drive & IT. The basic discussion during visit to the stalls was to see the operations of these companies in order to increase the efficiency, productivity and quality of customer operations of Indian companies working in these areas.

Day 2 – Tuesday, 26th April 2016

1. Meeting with senior VDMA officials

Present for the meeting

Mr. Rainer Hundsdörfer, President of the VDMA Foreign Trade Committee

Mr. Ulrich Ackermann, Managing Director, Foreign Trade, VDMA

Mr. Gadow (Sales Director) and Mr. Zarp (Member of the board), Getriebebau NORD

VDMA (VerbandDeutscherMaschinen- und Anlagenbau, German Engineering Association) represents over 3,100 mostly medium-sized companies in the capital goods industry, making it the largest industry association in Europe. Established in 1892 and based out of Frankfurt, the association represents the shared financial, technical and scientific interests of the mechanical engineering industry, especially with respect to national and international authorities and business groups.

- DHI and VDMA have in the recent past worked together at various seminars, workshops, exhibitions etc. During the discussions the commonalities arising out of India's need for knowledge from Germany was highlighted. Germany is now evolved in the manufacturing sector at Industry 4.0 level, while, India can be said to be at Industry 2.0. It was discussed that at present, India imports about US 20 billion worth of capital goods. Germany is an important partner, particularly in high and advanced technology machines. It was emphasised that German companies can look at setting up base in India though either of the three options, Wholly Owned subsidiary (for very large demands), Joint Venture (for moderate demands) and Technology Transfer (for low demands).
- Joint activities between DHI & VDMA to promote flow of knowledge, which Germany possesses, but is not able to produce products based on these knowledge on account of higher costs of conversion, skills etc. Were also discussed during the meeting. In order to take these joint activities to the next level, both sides showed interest in signing an MoU based on common

agenda and joint actions , during the forthcoming visit of Dr.Festge, President, VDMA to India later in the year.

- Meeting with Deputy Minister of Industry and Trade of the Czech Republic H.E. Jiri Havlicek. The Deputy Minister of Industry explained lot of Czech companies are participating in the new enquiries of machine tools refurbishing, new machine tools, repair of forging presses and new furnaces of HEC. Secretary explained HEC is floating tender one by one and it would be in the interest of the Czech side to participate not only in the bidding system but they must also invest in terms of technology and fresh investments. New Investments can be in the form of Joint Venture and equity base can be discussed with HEC on beneficial terms.
- The Czech companies which came for the meeting were

ALTA- This is the biggest company of Czech Republic with wide references in diversified business from Railways, Mining Equipment's to refurbishing of old machine tools and supply of New Heavy Machine tools. The company is discussing with HEC Ranchi for setting up new manufacturing units for underground Mining equipment's like Shearing Machines and conveyors for Coal Transportations from deep underground mines for meeting the requirements of Coal Industries in India. So far these machines are not being manufactured in India. The details of machines were given to HEC and it was decided HEC will arrange for making presentation jointly to Coal India and will try to take a developmental order. HEC is also discussing with ALTA for putting new railway axle manufacturing unit for supplying to Indian Railways. ALTA is ready to bring financial Institutions for putting the unit, the modalities being discussed for terms and conditions of payment and technical points will be frozen in coming days.

TS Plzen – The company is the original equipment manufacturer of the Heavy Forging press being used by HEC. The company is considering escalating the capacity of the forging press from 6000T to 7200T so that large forgings can be manufactured in India. This will help capacity enhancement within the country to undertake intricate type of special forgings for self-sustainability.

VHS, SKODA Machine Tools, Vitkovice are the Czech companies who are bidding for HEC projects, they were requested to manufacture of critical components of HEC upcoming projects within the country instead of bringing from Czech Republic. Vitkovice agreed to part the drawings to HEC for manufacturing of the critical components , this way the cost of project may go down substantially and HEC will also get orders and experience of manufacturing these items for the critical projects of modernization being undertaken by HEC.

These companies are giants in the modernization, design and manufacturing stream and have already forwarded proposals for modernization of Indian manufacturing services.

2. Meeting with Murrelektronik GmbH

Murrelectronik GMBH, headquartered in Germany is a one of the leading companies in field of mechanical and system engineering. The company offers a comprehensive product range for electrical and electronic installation concept from the cabinet to the interface to the field. The company is a globally operating one with almost 2000 employees in every continent. During the meeting the company discussed plans for setting up an office in Bangalore, India and were keen to understand the thrust focus under the "Make in India" initiative. It was discussed that in view of the company's expertise in systems engineering and industrial automation, it can be one of the key partners for Indian industry to transition to industry 4.0

Day 3 - Wednesday, April 27, 2016

1. Visit to Fraunhofer IST

As an industry oriented R&D service center, the Fraunhofer Institute for Surface Engineering and Thin Films IST is pooling competencies in the areas film deposition, coating application, film characterization, and surface analysis. Fraunhofer IST has an office and laboratory area of more than 4000 square meters over 100 tenured employees are addressing a variety of research projects. Its capabilities are supplemented by the competencies of other institutes from the »Fraunhofer Surface Technology and Photonics Alliance«. Many projects are supported by funding through the *Land* Niedersachsen, the federal government, the European Union, and other institutions.

During the meeting at Fraunhofer, it was highlighted that the most significant partnership between India and Germany lies in their partnership for technology and R&D. German collaboration with India is important for India's new flagship programmes such as 'Make in India' and 'Digital India'. While Make in India aims to transform India into a global manufacturing and designing centre, Digital India intends to make India a digitally empowered society. Both the countries have already pledged to find new avenues of collaboration in Digital India in the Third India Germany Inter-Governmental Consultations (IGC) held in New Delhi last year. During the meeting, DHI framework MoU with Fraunhofer as the technology resource partner was discussed. During the meeting, the specific proposal for setting up a casting excellence centre in India was discussed and it was proposed that a joint working group will be formed in order to take this activity further and the members of this JWG will come from associations, ministry, industry and Fraunhofer will also nominate a member for the JWG. It was proposed that a strong coordination between the engineering industries of India with Fraunhofer to mitigate India's technology gaps. This JWG will decide the the relevant technologies needed by the Indian SME's, Large PSU's as well cluster groups. The JWG will also decide the modalities, actual funding requirement, conditions of transfer of technologies, name of institute of Fraunhofer which will transfer and will also coordinate for the actual transfer of technologies and implementation of these technologies.

2. Meeting scheduled at DLR, Braunschweig

The **German Aerospace Center** (German: Deutsches Zentrum für Luft- und Raumfahrt e.V.), abbreviated **DLR**, is the national center for aerospace, energy and transportation research of the Federal Republic of Germany. Its headquarters are located in Cologne and it has other multiple locations throughout Germany. The DLR is engaged in a wide range of research and development projects in national and international partnerships. In addition to conducting its own research projects, DLR also acts as the German space agency. As such, it is responsible for planning and implementing the German space programme on behalf of the German federal government. As a project management agency, DLR also coordinates and answers the technical and organizational implementation of projects funded by a number of German federal ministries.

DLR has approximately 7400 employees at 16 locations in Germany. It has 29 institutes and facilities, spread over 13 sites, as well as offices in Brussels, Paris and Washington, D.C. DLR has a budget of about 670 million euro to cover its own research, development and operations.

Various areas of transport technologies which are of interest to India were discussed during the meeting. Germany deals with cutting edge technologies in areas of surface transport, where India is at-least 30years behind. The need to understand German expertise and then develop strategies to be benefit from them were discussed during the meeting. Areas of cooperation like **transport technologies , electric mobility and advanced manufacturing technologies** were discussed during the meeting. The leads generated may be used to develop technology projects in identified Indian beneficiaries in civilian side. DLR has developed three dimensional models of the whole city including streets, street lights, and achieved the technologies for driverless cars which can analyse the objects in-front of the vehicle and have the capabilities of locating the GPS positioning of the vehicle in real time. It has also developed vehicle with remote driving. DLR has mastered technologies for Aircraft Manufacturing and it supplies these technologies to European Manufacturers supporting Airbus.

3. Meeting Scheduled at Hamburg.

Paulwurth of Luxembourg is one of the pioneer company in the world for making Blast Furnaces for the Steel Industry and have also wide references in making stamp charges Coke Oven Batteries and Coke Oven Machines which are of 7.5 meter height with latest pollution control systems. HEC has signed MOU with Paulwurth for manufacturing the Coke Oven Machines and Batteries for the Steel Industries in India taking the latest technologies from Paulwurth S.A. Mr Frank Mura Vice President, Mr Anil Anand MD Paulwurth India were requested to part the technologies to HEC and set up a pilot plant with the latest technologies in Steel Authority of India with finance coming from Paulwurth for making these machines and commissioning these projects. They have agreed to make these technologies

available to HEC along-with the detailed design and engineering for the Coke Oven Machines machines and batteries in India. They have also agreed to discuss the financial implications with HEC and would be very much interested to take up the new opportunities coming its way for implementation in steel sector. They requested the Department to support the introduction of new technologies for the benefit of capital goods industry. HEC requested for the support to be given for presentation for new technologies to be given to the Department of Steel.

FEW PHOTOGRAPHS

TAKEN DURING THE SHOW

**Mr. Girish Shankar, Secretary, Department of Heavy Industry, Government of during
"Workshop on Indo-German Innovation Partnership through Industry 4.0" held on 25th
April 2016 at Hannover Messe**

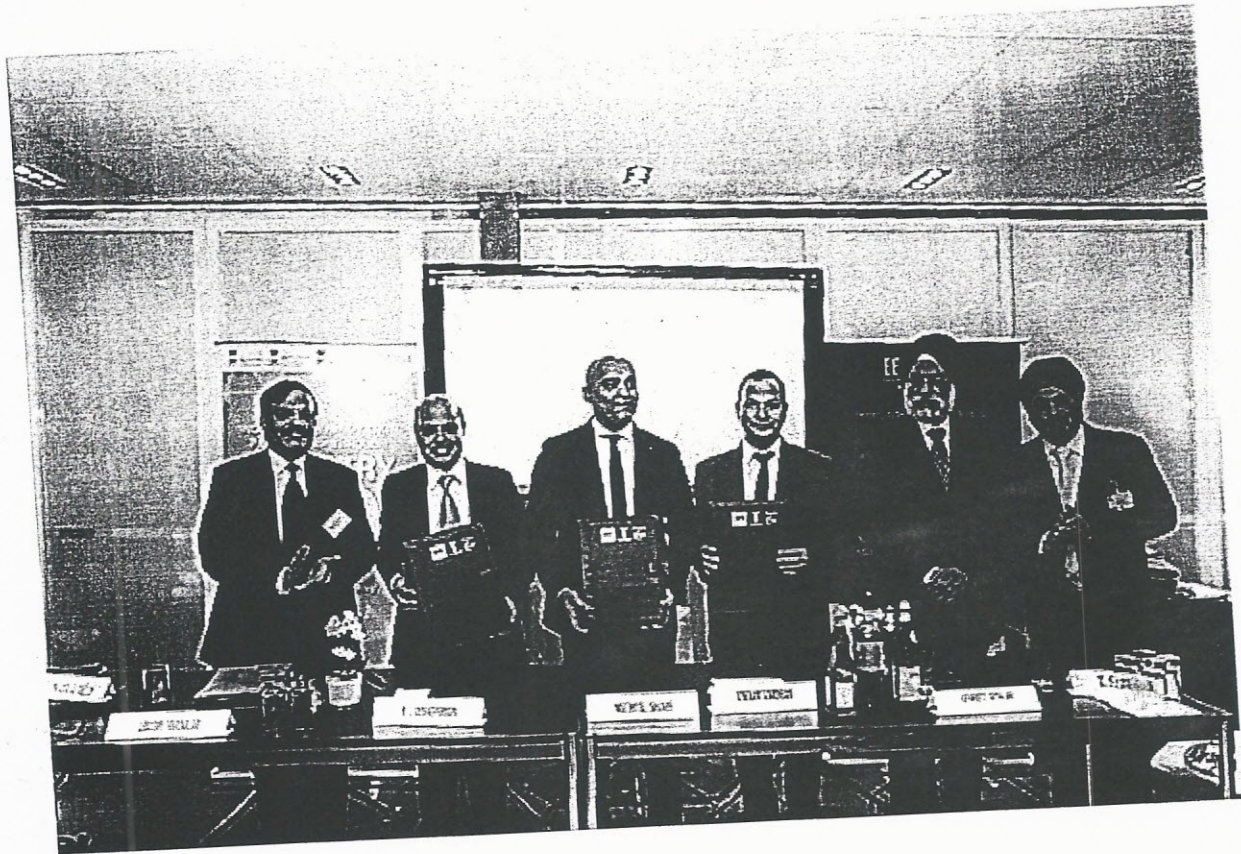


A SECTION OF THE AUDIENCE



MOU was signed between Department of Heavy Industry, Ministry of Industries & Public Enterprises, Government of India, Hannover Milano Fairs India Pvt. Ltd. & FICCI for promoting technology & innovations through WIN India series of events. From L – R - Mr. Girish Shankar, Secretary, Department

of Heavy Industry, GOI, Mr. M. S. Unnikrishan, Co Chair of FICCI Capital Goods Committee, Mr. Mehul Shah, MD, HMFI Ltd, Mr. VikramVardhan, Second Secretary, Embassy of India, Berlin, H.E. Mr. Gurjit Singh, Ambassador of India to Germany & Mr. T. S. Bhasin, Chairman, EEPIC India



A view of India Pavilion at Hannover Messe



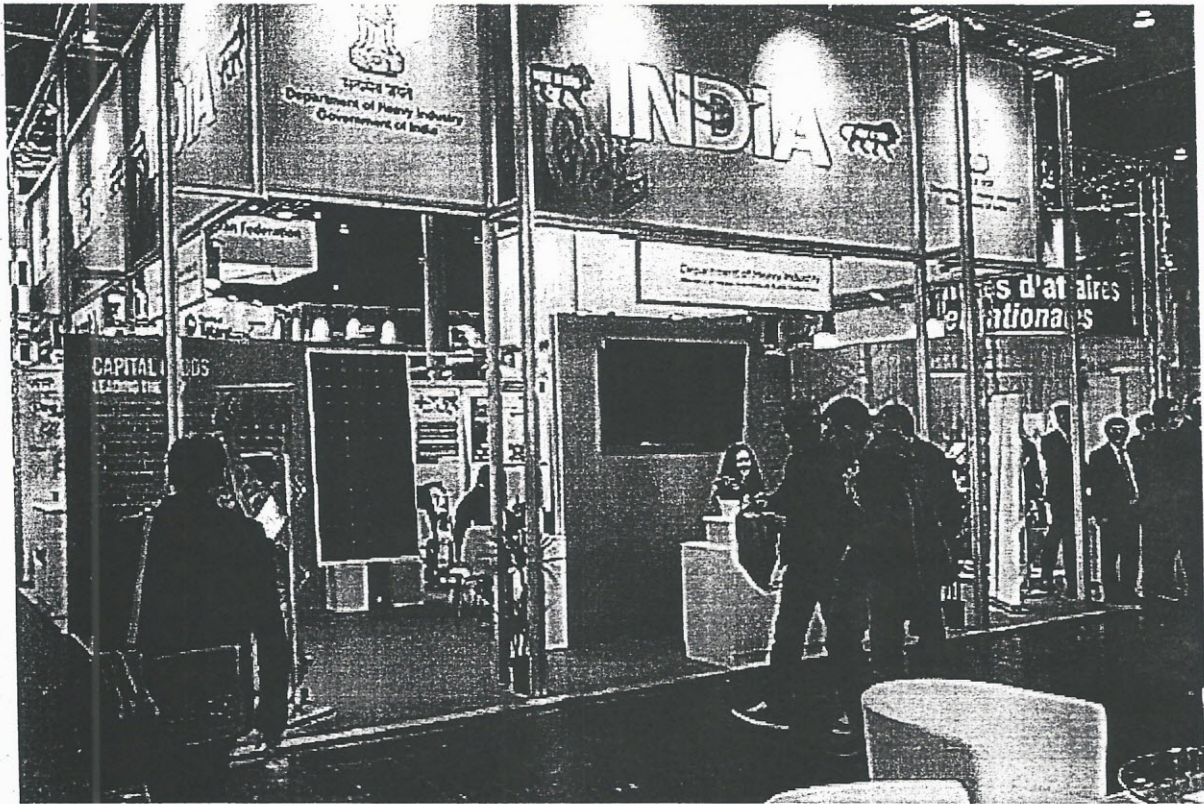
Exhibitors Stall at Hannover Messe 2016



H.E. Mr. Gurjit Singh, Ambassador of India to Germany & Mr. Girish Shankar, Secretary, Department of Heavy Industry, Government of India on a guided tour to Beckhoff Automation at Hannover Messe



Pavilion of Department of Heavy Industry, Govt. of India



Department of Heavy Industry, Government of India along with its PSUs, Embassy officials & EEPC India team at Department of Heavy Industry booth at Hannover Messe

