Newspaper Clips
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Mail Today ND 13/05/2015
P-8

IITIANS DEVELOP DISTRESS DEVICE

By **Mail Today Bureau**
in New Delhi

A GROUP of IIT-Delhi students have developed a device, which can be used as a communication system —like internet, SMS and "near field communication" — to alert your loved ones when they are in a distress situation.

The project — along with another innovative device, can amplify and attenuate selective sounds — developed by a group of students from IIT-Roorkee has won the 'Ericsson Innovation Awards 2015'. The two winning projects were Guardian from IIT Delhi and Smart Earphone from IIT-Roorkee.

'Guardian' device, developed by IIT-Delhi, uses multiple cellular phone towers to transmit data and triangulate a victim's position. The device, developed by IIT-Roorkee, is called 'Smart Earphone'. By using the device, a user can decide whom/what he/she wants to selectively hear and at what volume. The device will be integrated to smartphone via

Guardian device uses multiple cellular phone towers to transmit data.

an App. All the audio signal processing will be done by the App only. The two winning teams will be supported by Ericsson India financially to the extent of ₹10 lakh each towards incubating the winning projects at any IIT approved technology business incubators.

A total of 67 projects were submitted by IIT students from Chennai, Delhi, Kanpur, Kharagpur, Mumbai, Roorkee and Banaras Hindu University (BHU) .The projects submitted were in the areas such as web design, cloud computing, storage and networking, human-machine interface, embedded and hardware system design, MIMO (multiple-input, multiple-output), machine-to-machine/Internet of Things, software-defined networking, open source, signal processing, graphics and visualization, as well as research.

As many as 10 proposals were shortlisted in the month of March 2015 on criteria such as degree of innovation, feasibility, scalability and the overall impact on masses.

Times Of India ND
13/05/2015 P-32

IIT Delhi, Roorkee win Ericsson Innovation Awards

New Delhi: Swedish technology company Ericsson on Tuesday announced the winners of Ericsson Innovation Awards 2015 at the IIT Delhi. The two winning projects were Guardian from IIT Delhi and Smart Earphone from IIT Roorkee. The teams will receive Rs 10 lakh each from Ericsson towards incubating the projects at any IIT-approved technology business incubators.

Chris Houghton, head of region India, Ericsson, said "The winning projects score high in terms of parameters like innovativeness, commercial feasibility, scalability and will be supported by Ericsson through the incubation period". TNN

Researchers decode the science behind earthquakes

http://www.hindustantimes.com/higherstudies/researchers-decode-the-science-behind-earthquakes/article1-1344388.aspx

Pravin Jagtap, a PhD research scholar at the department of civil engineering, IIT Delhi, is currently studying building contents can be safeguarded from devastating earthquakes, for which a mature and earthquake-resistant base isolation technology may be useful. “Base isolation increases the flexibility of the building contents which helps in reducing the transfer of earthquake forces into the contents and dissipates the energy in damping. Two most common types of base isolation systems used in practice are, rubber bearings and sliding systems. There are numerous research works carried out in the past for seismic base isolation of building structures; however, application of base isolation technology in safeguarding and design of the building contents has large scope,” says Jagtap.

Jagtap’s research area is earthquake engineering, in which he is working on seismic safety of the contents of the civil engineering structures/ buildings. Safety of these building contents is vital for proper functioning of power plants, industrial facilities, hospitals, and other important structures after earthquakes.

“Damages to the building contents may result in costly economic losses, possible death and injury to the occupants. Different types of failure of the building contents have been noticed during past earthquakes; namely, failure of the fire-fighting facilities, failure of liquid storage tanks, failure of HVAC systems, failure of chemical storage shelves and chemical containers, failure of the connections of water supply pipes, escalator failures, sliding and uplifting of unanchored tanks etc.

Non-functioning of these cause serious disasters in post-earthquake events. The estimated economic loss from failure of the vital building contents can be many times the construction cost of the building. It is also observed that the costly damages to contents of building can occur in earthquakes of moderate intensities which would cause little or no damage to the building,” adds Jagtap who did an MTech in structures from IIT Delhi and BE in civil engineering from the University of Pune.

Elaborating on his research work in geophysics, Ajay Paul, a scientist at the Wadia Institute of Himalayan Geology, Dehradun, says: “Himalayas, one of the most seismically active belts, have been formed due to continent to continent collision and are probable locations for future moderate to great earthquakes. The accumulated strain energy is being released in the form of major earthquakes. The four great earthquakes in the last 150 years in Himalaya – Shillong earthquake (1897), Kangra earthquake (1905), Bihar – Nepal earthquake (1934) and Assam earthquake (1950) are examples of this. To fill the unruptured gaps left between boundaries of these large earthquakes, there is a probability of another large earthquake in future.

“My research is about understanding of the earth with reference to earthquakes, plate motions and subsurface structure. The objective is to do real time monitoring of earthquakes in NW Himalayas, earthquake precursory research and study on subsurface structure of the earth using geophysical techniques,” he says.

Paul’s study region lies between the epicentre of the Kangra earthquake in the east and Bihar-Nepal earthquake in the west and is termed as Central Seismic Gap (CSG) for great earthquakes.

“The Garhwal-Kumaun region in CSG has experienced a number of moderate size events such as 1991 Uttarkashi and 1999 Chamoli earthquakes. GPS data also suggests that this central segment of the Himalayas is critically stressed to produce great earthquakes. Therefore, there is a need to monitor the seismicity of the region. Seismic data of broad band seismic network is being continuously acquired and monitored.

“Some of the instruments are connected through VSAT but with a view to boost the earthquake monitoring and precursory research it has been planned to connect all the geophysical instruments through VSAT communication system. The Nepal earthquake of M7.9 lies in the CSG. Although whole of the accumulated energy in the CSG has not been released but it can be said that the return period of a great earthquake in the epicentral zone of Nepal earthquake has certainly been extended.

“The outcome of these research works will improve our understanding about the precursory research, seismicity pattern and identification of active faults which may be the source of energy release in the form of earthquakes in future,” adds Paul who completed MTech in geophysics and PhD in seismology,” says Paul.

(Application of base isolation technology in safeguarding and design of the building contents has large scope even there is record of past research Pravin Jagtap, research scholar, IIT Delhi

Hindustan ND 13/05/2015 P-8

2014 में 650 तो 2013 में 400 से अधिक सीटें खाली रह गईं

आईआईटी में खाली रह जाती हैं कई सीटें

नई दिल्ली | प्रमुख संवाददाता

भारतीय प्रौद्योगिकी संस्थान (आईआईटी) की संख्या हर साल बढ़ती जा रही है लेकिन दूसरी तरफ आईआईटी में सीटें खाली रहने की तादाद भी बढ़ता जा रहा है। 2014 में जहां आईआईटी में 650 सीटें खाली रह गई थी तो 2013 में आईआईटी में चार सौ से अधिक सीटें खाली रह गई थी तो इस बार 25 हजार छात्रों ने एडवांस्ड की परीक्षा के लिए पंजीकरण नहीं कराया।

जेईई-एडवांस्ड कमेटी के पूर्व चेयरमैन एचसी गुप्ता कहते हैं कि कई छात्र ऐसे होते हैं, जो अपने घर से दूर जाकर नहीं पढ़ना चाहते। चूंकि आईआईटी हर राज्य में नहीं हैं। ऐसे में ये छात्र जेईई-मेन के स्कोर के आधार पर अपने राज्य के इंजीनियरिंग कॉलेजों में दाखिला ले लेते हैं। 2014 में आईआईटी जेईई एडवांस की काउंसलिंग के प्रमुख रहे एम.के.पानिग्रही कहते हैं कि कुछ छात्र मनपसंद संकाय न मिलने की वजह से छोड़ देते हैं कुछ को उनकी प्राथमिकता वाली आईआईटी में दाखिला नहीं मिलता है। इस वजह से सीटें खाली रह जाती है।

उन्होंने कहा कि इसके लिए आईआईटी ने 2014 काउंसलिंग के बाद सीट सुनिश्चित करने के लिए एक अतिरिक्त दिन दिया था ताकि अधिक छात्र दाखिला ले सकें। एक छात्र के लिए अनिवार्य किया गया था कि 50 विषयों के विकल्प भरें क्योंकि पिछली बार देखने में आया था कि छात्र सीमित विकल्प भरते थे जिससे काउंसलिंग में उन्हें दाखिला नहीं मिलता था पर इससे अधिक फायदा नहीं मिला।

आईआईटी खड़गपुर के एक प्रोफेसर ने बताया कि पिछली बार आईआईटी में दाखिला वापस लेने का ट्रेंड देखने में आया था। आईआईटी में सीटें खाली रहने का कारण नए आईआईटी के बजाए एनआईटी या राज्य के उम्दा इंजीनियरिंग कॉलेज को तरजीह देना है। नए आईआईटी के मुकाबले छात्रों का स्थापित एनआईटी पर अधिक भरोसा भी एक कारण है।

ऐसे होता है दाखिला

आईआईटी और राज्य स्तर के इंजीनियरिंग संस्थानों में दाखिले के लिए दो परीक्षा होती हैं। पहली जेईई-मेन और दूसरी एडवांस्ड। एडवांस्ड में बैठने के लिए सिर्फ दो मौके मिलते हैं। वहीं जेईई-मेन की परीक्षा तीन बार दी जा सकती है। जेईई-मेन की परीक्षा एडवांस्ड की क्वालिफाइंग परीक्षा होती है। मेन की परीक्षा के शीर्ष डेढ़ लाख छात्र आईआईटी के लिए एडवांस्ड की परीक्षा देते हैं। मेन की परीक्षा सीबीएसई बोर्ड और एडवांस्ड की परीक्षा आईआईटी आयोजित करता है।

कब शुरू होगी प्रक्रिया

- **18** जून को जारी होगी जेईई एडवांस की ऑल इंडिया सूची
- **24** जून को जारी की जाएगी जेईई मेंस की सूची
- **09** जून तक अपने विकल्प भर सकेंगे
- **01** जुलाई को पहले स्तर की सीटों का आवंटन होगा
- **02** से सात जुलाई तक आवंटित सीटों पर होगा दाखिला

सीटें खाली रहने के कारण

- मनपसंद आईआईटी और विषय न मिलना
- नए आईआईटी में दाखिले को प्राथमिकता न देना
- उत्तर भारतीय छात्र खाने व दूरी की वजह से दक्षिण में दाखिला कम लेते

इस बार क्या है नया

- इस बार आईआईटी और एनआईटी की संयुक्त दाखिला प्रक्रिया होगी
- आईआईटी में बड़ी संख्या में सीटें खाली रह जाने के कारण बदलाव
- इस साल 1,52,401 छात्र जेईई-एडवांस्ड के लिए चुने गए

Millennium Post ND 13/05/2015 P-6

Appointing V-Cs for central varsities tough for govt

Irani yet to 'finalise' appointment of V-Cs in 10 of 41 central univs

DHIRENDRA KUMAR

NEW DELHI: Despite the fact that the Narendra Modi-led NDA government is all set to complete one year in office on May 26, the process to appoint new vice-chancellors (V-Cs) in 10 central universities is proving to be a herculean task for the Centre. The Union Human Resource Ministry, headed by Smriti Irani, is yet to "finalise" the appointment of V-Cs in 10 of the 41 central universities across the country.

Even though the Modi government is giving special attention towards development in north-eastern states, the post of V-C in North-Eastern Hill University, Meghalaya, is lying vacant since June 2013. The university had a regular V-C till May 2013.

Irani said the other nine universities without regular V-Cs include Central University of Odisha, Central University of Rajasthan, Guru Ghasidas Vishwavidyalaya in Chhattisgarh, Central University of Kashmir, Central University of Jharkhand, Central University of Tamil Nadu, Central University of Bihar, University of Allahabad and University of Hyderabad.

Even though the Modi government is giving special attention towards development in north-eastern states, the post of V-C in North-Eastern Hill University, Meghalaya, has been lying vacant since June 2013. The university had a regular V-C till May 2013

In a written reply to the Rajya Sabha, the minister said the tenure of V-Cs is different for all central universities. Therefore, there are always vacancies. Filling these vacancies is an ongoing process, which is at different stages for different universities, and no specific date can be given regarding the filling of such posts, the minister said.

There are seven universities, where the posts of V-Cs are lying vacant for the past one year. Surprisingly, of these, four universities are in BJP-ruled states of Rajasthan, Chhattisgarh, Jharkhand and Jammu and Kashmir. Allahabad university does not have a V-C since July 28, 2014; while in Hyderabad university, the V-C's post is vacant since January 28, 2015.

Citing reasons causing delay in selection of V-Cs, Irani said, "The delay in filling of vacant posts is due to the scrapping of some search-cum-selection committees (SSC) due to some deficiencies and re-constitution of panels." She added, "In some cases, the universities took time in providing executive councils' nominees for the panel."

"A university without a V-C is like a country without a PM. The university becomes dysfunctional sans a regular V-C, which paralyses the organisation on policy matters. The HRD ministry should devise a mechanism to fill these vacancies," an UGC official said.

Mint ND 13/05/2015 P-8

ADMINISTRATIVE CHALLENGE

One out of every four central universities has no full-time VC

By Prashant K. Nanda
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NEW DELHI

At least 10 of the 41 central universities under the direct supervision of the Union human resource development (HRD) ministry are headless.

Shillong's North Eastern Hill University has had no full-time vice-chancellor since June 2013, according to ministry data. Five other central universities—Central University of Odisha, Central University of Rajasthan, Guru Ghasidas Vishwavidyalaya in Chhattisgarh, Central University of Kashmir and Central University of Jharkhand—have been headless since 1 March 2014.

Similarly, Central University of Tamil Nadu and Central University of Bihar, too, are functioning without permanent vice-chancellors since 2 March 2014. The University of Allahabad and Hyderabad University have not had heads since 28 July 2014 and 28 January 2015, respectively.

Without a full-time vice-chancellor, a university cannot take decisions on appointing permanent teachers, improving infrastructure and revamping curricula, said a government official, who declined to be named. Central universities are also facing a 15-45% teaching staff shortage.

No new vice-chancellors could be identified in the Narendra Modi-led government's first few months as some search-cum-selection committees (SSC) set up by the previous Congress-led United Progressive Alliance government had been scrapped by the Bharatiya Janata Party-led National Democratic Alliance government, the official said.

HRD minister Smriti Irani on Monday admitted in the Rajya Sabha that one of the reasons for the delay in appointing vice-chancellors was the "scrapping of some SSCs due to some deficiencies". The process of reconstituting an SSC and finding convenient dates for its members to meet and create a list of candidates is time consuming, she said.

In the absence of permanent vice-chancellors, the senior-most professors or pro-vice-chancellors have been made in-charge vice-chancellors in such central universities, the ministry said.

> Without a VC, a university can't take decisions on improving infra, appointing permanent teachers

A Delhi University professor, who requested that he not be named, said it was pointless to select SSC members who could not spare time to interview and select vice-chancellors. "The issue is, there is too much interference in university matters by the ministry. But when it comes to selecting VCs, it's quite slow," the professor said.

An HRD ministry official said the process of selection of vice-chancellor is taking time and that the ministry is of the view that, going forward, they would start the process of selection ahead of the retirement of the incumbent.

The official said the ministry is carrying out due diligence, even if it takes a little extra time. In the last three months, it has appointed vice-chancellors to five universities—in Jammu, Karnataka, Himachal Pradesh, Haryana and Madhya Pradesh.

IIT Bombay locks up terraces after suicide

Not fair, say students, as terraces provide much-needed room for relaxation.

http://www.mumbaimirror.com/mumbai/others/IIT-Bombay-locks-up-terraces-after-suicide/articleshow/47255015.cms

Following the suicide of the third year chemical engineering student, IIT Bombay's administration has decided to lock up the terraces for safety reasons. IIT Bombay director Devang Khakker has also constituted a high level committee to introspect on the suicide and give feedback and suggestions.

Among the favourite hangout spots on campus, the terrace atop the hostel buildings is the getaway haven for the students who wish to unwind, especially in the evenings.

"I usually make a trip to the terrace almost every day after snack to relax," said a resident of Hostel 11. "Sometimes I read a book or listen to music and chat with a few friends. It's that informal space for casual conversations that is important to every hostel resident." Shutting the terraces, the student said, was not the solution. "Locking the terraces won't solve anything. People always work around restrictions. Without terraces, the hostels only become more claustrophobic," she said.

The hostel terrace has an emotional connect for a lot of students. Uddipta Chatterjee, a senior PhD student, said: "I proposed to my girlfriend on the terrace. Other students have their first cigarette or meet their first best friends on the terrace. Locking that space away cannot be the solution; instead, the roots of the problem need to be addressed." He added that several students living on the top floor of the hostels often sleep on the terrace at night.

"The terraces will be kept locked for good," said IIT Bombay spokesperson Rashmi Uday Kumar. "Some of the doors may need locks to be fixed, and the work is in progress."

Another member of the administration said that all hostel wardens have been instructed to keep a close watch on the terraces and ensure that they stay locked at all times.

Sources stated that the high level committee which was appointed last week to probe into the suicide comprises the head of the chemical engineering department, senior hostel authorities, and a senior professor. The committee will give their suggestions to Khakker about measures to avoid student suicides.

Death on campus

On May 4, third year chemical engineering student0 Jitesh Sharma, 21, committed suicide on the terrace of a hostel by consuming a poisonous chemical called sodium azide. He left a suicide note that said he was under depression caused by academic pressure.

Less than a year before that, fourth year electrical engineering student Aniket Ambhore, who was also suffering from depression, fell to his death from the sixth floor of one of the hostels.

Indian Express ND 13/05/2015 P-6

After food park, now discovery park, IIIT under Centre scanner

Planned in 2008, the discovery park is considered Rahul's pet project

MAULSHREE SETH
LUCKNOW, MAY 12

EVEN AS the Centre said that the mega food park in Amethi was cancelled as the promoter company failed to comply with requisite conditions for approval, the Congress alleged that the Narendra Modi government is now planning to shift the IIIT campus and Science and Technology Discovery Park out of Rahul Gandhi's Lok Sabha constituency.

Established in 2005 as extension campus of Indian Institute of Information Technology (IIIT)-Allahabad, the Amethi campus was named as Rajiv Gandhi IIIT while the Discovery Park, planned in 2008, is considered as Rahul Gandhi's pet project.

While IIIT-Allahabad has already communicated to the Department of Science and Technology its inability to operate Discovery Park, a committee headed by IIT-Kanpur director Indranil Manna has been formed by Union HRD Ministry to look into the sustainability of IIIT-Amethi extension campus. The committee is expected to give its report by end of May. The Discovery Park, to be established at IIIT-Amethi campus, was termed as first of its kind project in India. The idea was to have a park with experts to educate farmers on the new techniques of farming, soil testing and at the same time take up research.

However, the parent institute, IIIT-Allahabad, said they do not have expertise in agriculture to sustain it. Moreover, in a letter sent to Department of Science and Technology, IIIT-Allahabad claims that it has been informed that the proposal was never given final clearance.

"It was in May last year only that our board had decided that it was not possible to sustain the park and had informed the Department of Science and Technology about our decision. Recently, the department made it clear that the proposal to establish discovery park at Amethi campus was never given final nod because we do not have the expertise in the field of agriculture to operate it," said Prof Somenath Biswas, director, IIIT-Allahabad.

Asked about the future of the Amethi campus and whether it would be merged back with IIIT-Allahabad; Biswas said, "No decision has been taken yet. During its formation, it was said that it will be reviewed in 12th plan period whether the campus can function independently. Since 2012, we have been saying that it is becoming difficult to manage the campus from here but it was only recently that a committee has been formed to review the issue". Biswas said that committee headed by IIT-Kanpur director is expected to give its report by end of May.

Meanwhile, Congress alleged that NDA government has made its mind to close the extension campus and was only doing an eye-wash exercise. "We have come to know that they have made up their mind to close IIIT-Amethi campus like they did with the food park. They are indulging in politics of vengeance," said Satyavrat Tripathi, chairman, UP Congress Communication Department.

Hindu ND 13.05.2015 P-8

Fraudulent duplication

Acts of fraud in the running of higher education institutions is almost a given; what's unusual is data being present to prove them. Now, an analysis of names of faculty members submitted for approval to the All India Council for Technical Education (AICTE) by engineering colleges has shown that around 50,000 'duplicate' teacher names exist on the rolls of more than one college; in an indication of how rampant the practice is, the proportion of engineering colleges in a State that had such 'duplicate' teachers ranged from 90 per cent to a hundred per cent. As with much else, India's official norms for engineering colleges are laudable: undergraduate colleges must have a faculty ratio of 1: 15, and a cadre ratio of 1:2:6 for professors, associate professors and assistant professors respectively. On the ground, as is widely known, the norms are observed only in the breach. So widespread is the 'sharing' of teachers to meet the norms that the practice is said to have become organised, with details of agents and teachers known to be 'for hire' available in a given city or district. Earlier this year, the Jawaharlal Nehru Technological University in Hyderabad disaffiliated nearly 150 engineering colleges for insufficient staffing. The Punjab Medical Council found 400 'ghost' teachers enrolled in four private medical colleges. College managements for their part complain that even when they try to follow norms, corruption in the approvals process is rampant.

By 2020, India will be the 'youngest' country, its freshly graduating youth propelling the biggest labour force in the world. The bulk among the most educated of this workforce of the future will not come from the IITs and the IIMs, but from the thousands of technical institutes that have sprung up. Just 15 per cent of young people enrol for higher education, a figure the government has been trying to push up. Lakhs of students are entering technical education courses, some aspiring to be the first engineers and doctors in their families, at considerable financial cost. But by not ensuring that adequate numbers of teachers are available, let alone monitoring the quality of teaching, India is not doing right by its youth. Only a fifth of all Indian graduates are employable, a range of surveys by corporate hirers over the last three years has shown, and the poor quality of teaching is one of the causes. The facts are hiding in plain sight; a special investigation by *The Hindu* into this state of affairs was based on data from the AICTE's own website, analysed by the open data website 'Factly'. The apex body governing technical education never thought to do a simple search of its own database, it would appear. It remains to be seen whether governments at the Centre and in the States will act on this.

Hindustan Times ND 13/05/2015 P-11

Stop funding self-financing varsities: Govt to UGC

Brajesh Kumar,
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NEW DELHI: The human resource development (HRD) ministry has directed the University Grants Commission (UGC) to stop financing deemed universities, many of which are self-financing private varsities, asking it come up with uniform guidelines on their funding pattern.

The direction comes after questions were raised in parliament about why scarce public resources should be spent on self-financing institutions.

The UGC has in turn formed a committee to take a fresh look into its funding pattern. Among the 21 deemed universities eight are 100% funded, and the rest received partial funding.

According to sources, the ministry questioned the UGC about fully funding some private universities which included Avinashilingam University in Coimbatore, Dayalbagh Educational Institute, Agra and Gujarat Vidyapeeth in Ahmedabad.

UGC chairman Ved Prakash confirmed that the HRD ministry had asked the UGC to review the funding pattern. "We have set up a committee that will review the entire process," he said.

Prakash, however, maintained that the deemed universities, even the private ones, have been receiving funds for years at the direction of the ministry.

Sources said, the ministry while clearing the funds for the session 2014-15, had stopped the funding for the current session 2015-16.

Among others, the ministry's decision also impacts the Tata Institute of Social Science (TISS), a Mumbai-based premier institute for social works and development related studies.

Being a fully-funded institute under the Allocation of Business Rules of the HRD ministry, it has been clubbed with the private self-financing deemed universities that receive 100% UGC grants.

Sources said the committee set up to review the funding pattern is likely to draw a distinction between public-funded institutions and private self-financing ones enabling TISS to receive funds again.

Asian Age ND 13/05/2015 P-15

TECH | BOOST

ER&D outsourced to India in 2014 for heavy engineering was $1.2 billion

India turns top destination for engineering R&D

AGE CORRESPONDENT
MUMBAI, MAY 12

India has become the preferred destination for engineering outsourcing.

The engineering R&D business outsourced to India in 2014 for heavy engineering was $1.2 billion, which is 40 per cent of the total value of ER&D outsourced globally, whilst for aerospace, it was $0.9 billion.

For the medical industry, engineering R&D outsourced to India was $0.7 billion which is expected to grow to $1.9 billion by 2020.

Speaking to this newspaper about India's high value exports, Cyient founder and executive chairman B.V.R. Mohan Reddy said that in the case of the consumer industry, India addressed $1.3 billion of engineering R&D, and this has the potential to grow to $2.3 billion by 2020.

Cyient Ltd. is one of the largest independent exporters of high-value R&D services from India with over 12,500 employees across 38 locations worldwide.

"The potential for engineering exports is increasing as Indian corporates are coming up with new business models, like risk-rewards," said Mr Reddy.

The future trend will be to outsource like Boeing did for its Dreamliner aircraft, where 30 per cent of its components come from outside of the US, while Japan worked on wings, the UK on landing gears, Sweden on cargo access doors, Italy on horizontal stabiliser, Canada on engine nacelles, and so on.

Products and services will be procured from around the world and the OEMs will just do assembly. Service providers are maturing and enhancing their capabilities to deliver complete product development as a true engineering partner, from concept to manufacturing rather than just focusing on design services.

They are achieving these through setting up cross functional teams, prototyping facilities and engaging in manufacturing ecosystem through partnerships.

India is perceived as a good destination of engineering outsourcing and now with Make in India, it will develop system manufacturing capability as well.

"All of this calls for more spending to happen in the product design and innovation. The spend on engineering R&D for the consumer industry has been growing by a CAGR of by 5 per cent for last three years and stands at $72 billion in 2014. Similarly for the medical industry, it is $24billion, while for aerospace, it is $26.4billion in 2014, added Mr Reddy.

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A helmet that guides firefighters through dense smoke

The helmet has been developed by a laboratory of the Defence Research and Development Organisation.

By **Raju Gusain**
in Dehradun

HERE'S a helmet which the firefighters will certainly need at times of crises. It's a helmet which will enable the user to see through thick smoke by means of a thermal camera — something that will make a firefighter's task much easier.

The helmet has been developed by Dehradun-based Instruments Research and Development Establishment (IRDE), a laboratory of the Defence Research and Development Organisation.

The helmet weighs 2.2kg and it provides the user the thermal imagery by means of a camera fitted on the front. The helmet was developed on the request of Indian Navy.

Other than helping the firefighters, this helmet can be useful in medical tests like tracking breast cancer, or for tracking water leakage in a building. The thermal camera, when used for medical tests, shows the cancer-affected area of the body in dark colour.

IRDE joint director Jai Prakash

Helmet will make firefighters' task easier

Singh said, "It provides vision to firefighters through dense smoke and the hands-free approach makes it effective during fire-fighting as well as search and rescue operations. It can be used for medical test like breast cancer and also for finding leakage in the water supply pipe."

The helmet has an advanced uncooled thermal imager, an OLED display with mechanical adjustable arm and a rechargeable battery pack. The rechargeable battery provides back-up for two hours.

The trial run of the helmet has been completed at the Nuclear Biological Chemical and Damage Control School (INS Shivaji, Lonavala), and on board ships and submarines at the Western Naval Command. By using the IRDE technology, a Hyderabad-based firm has supplied 20 such helmets to the National Disaster Response Force.

The helmet was displayed at the annual exhibition of the IRDE in Dehradun on Monday.

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Self-driving cars not crash-proof: Google

San Francisco: Google on Monday said that even self-driving cars that can sense and react faster than humans still wind up in accidents. "We've been hit from behind seven times, mainly at traffic lights but also on the freeway," Chris Urmson, the head of Google's autonomous car programme, said in an online post.

"We've also been side-swiped a couple of times and hit by a car rolling through a stop sign."

Google self-driving cars, of which there are now more than 20, have been in 11 minor accidents in the six years since the project began but they didn't cause any of the crashes, according to Urmson.

None of the accidents involved injuries, Google said. Google self-driving cars, which have "safety drivers" at the wheels to take over when deemed appropriate, have logged some 1.7 million miles, according to the California-based internet titan. "Even when our software and sensors can detect a sticky situation and take action earlier and faster than an alert human driver, sometimes we won't be able to overcome the realities of speed and distance; sometimes we'll get hit just waiting for a light to change," Urmson said. "And that's important context for communities with self-driving cars on their streets; although we wish we could avoid all accidents, some will be unavoidable."

AP

SAFETY CONCERNS: Google self-driving cars have been involved in 11 minor accidents in the six years since the project began

Google's fleet of self-driving cars are averaging approximately 10,000 autonomous miles weekly, mostly on city streets. "All the crazy experiences we've had on the road have been really valuable for our project," Urmson said.

"We have a detailed review process and try to learn something from each incident, even if it hasn't been our fault." He recounted self-driving car experiences that involved people-driven vehicles heading straight into oncoming traffic or turning hurriedly from wrong lanes.

"These experiences (and countless others) have only reinforced for us the challenges we all face on our roads today," Urmson wrote. "We'll continue to drive thousands of miles so we can all better understand the all too common incidents that cause many of us to dislike day-to-day driving." AFP