

समाचार पत्रों से चयित अंश Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा

A Daily Current Awareness Service



रक्षा विज्ञान पुस्तकालय
Defence Science Library
रक्षा वैज्ञानिक सूचना एवं प्रलेखन केन्द्र
Defence Scientific Information & Documentation Centre
मेटकॉफ हाऊस, दिल्ली 110054
Metcalf House, Delhi-110054

India, US ink defence pact

Announce logistics agreement, several new co-development projects

Starting his three-day visit to India in Goa on Monday, US Defense Secretary Ashton Carter declared that his Indian counterpart, Manohar Parrikar, is "one of the most important defence ministers in the world for me to interact with."

The reason for this was illustrated on Tuesday, when the two announced a breakthrough logistics agreement; new, high-level maritime dialogue; cooperation on submarines and tracking commercial shipping in the Indian Ocean, and a significant expansion of high-technology defence cooperation. After delegation talks in New Delhi, Carter and Parrikar announced a breakthrough in negotiating three "foundational agreements" that Washington has long pressed for to facilitate operational and technological cooperation.

They announced an "in principle agreement to conclude a logistics exchange memorandum of agreement (LEMOA), and to continue working toward other facilitating agreements to enhance military cooperation and technology transfer." The India-specific LEMOA, will allow American and Indian military units to use facilities in each others' bases, subject to mutual agreement in each instance.

As *Business Standard* has reported, another agreement - communications and information security memorandum of agreement - is close to finalisation. This would allow the US to supply India with highly secure radio equipment. Some work remains on a third agreement, the basic exchange and cooperation agreement for geospatial information and services cooperation (BECA), which relates to digital mapping.

In a strategic signal that will be noted in Beijing, the two ministers reaffirmed support for "freedom of navigation and over flight throughout the region, including in the South China Sea". Indicating the growing regional consensus against China's aggressive moves to control these waters, they "emphasised their commitment to working together and with other nations to ensure the security and stability that have been beneficial to the Asia-Pacific for decades."

Such intent had also been signaled in the "India-US joint strategic vision for the Asia-Pacific and Indian Ocean Region" that President Barack Obama and Prime Minister Narendra Modi signed in January 2015, Carter and Parrikar added teeth to that by announcing a bilateral maritime security dialogue, which would involve both sides' defence and foreign ministries. For the first time, the US -- a global leader in submarine warfare - agreed to work with India in this field. The joint statement "agreed to commence navy-to-navy discussions on submarine safety and anti-submarine warfare."

Intriguingly, given the navy's control over Indian Ocean shipping lanes, and over the strategic choke points at Hormuz and Malacca, the two sides "reaffirmed their desire to expeditiously conclude a 'white shipping' technical arrangement to improve data sharing on commercial shipping traffic. This would enhance India's ability to monitor vessels in these waters. The two sides also expanded the scope of the Defence Technology and Trade Initiative (DTTI), by announcing joint development of two projects in addition to the six projects already under way.

The two sides "agreed to initiate two new DTTI pathfinder projects on Digital Helmet Mounted Displays and the Joint Biological Tactical Detection System." Deepening high-technology cooperation, Carter and Parrikar also announced four "government-to-government science projects" on: high energy lasers, cognitive tools for target detection, small intelligent unmanned aerial systems, and the management of blast and blunt traumatic brain injuries.

They also agreed to deepen cooperation on two major DTTI projects already under way: one on jet engine technology (which India hopes to use in its Advanced Medium Combat Aircraft), and another on aircraft carrier design (for India's second indigenous aircraft carrier, INS Vishal). An "information exchange annex (IEA) was announced, which would allow the sharing of data about aircraft carriers.

In a measure that will go down well with the American public, India has begun assisting the Pentagon in locating the remains of US pilots who crashed in the Eastern Himalayas during World War II, whilst airlifting supplies from Assam to Chinese armies that were fighting the Japanese. After years of reluctance to allow US servicemen into sensitive Arunachal Pradesh, Parrikar has committed India's assistance. In Delhi, Carter also presided over the repatriation ceremony of an American pilot's remains from India to the US. He also met Prime Minister Narendra Modi and National Security Adviser Ajit Doval.

The Times of India
13 Apr, 2016

India, US agree to bolster marine security tie-up

Both Countries Agree To Ink Logistics Pact

American aircraft and warships will soon be able to access Indian military bases and vice versa for refuelling, repair and other logistical purposes.

The move will further tighten the India-US strategic clinch and help Washington in its ongoing "re-balance" of 60% of its naval forces to the Asia Pacific to counter an increasingly assertive China.

WHAT IT MEANS

- American aircraft & warships can use Indian military bases for berthing, refuelling, repair etc. US bases open for India as well
- Access to bases can be refused at any time

WHAT IT DOESN'T

- Stationing of US troops on Indian soil, support from India for US military action against 'friendly' nations
- Joint naval patrols

Signalling a shift from the UPA regime's diffidence over such pacts, defence minister Manohar Parrikar and his US counterpart Ashton Carter on Tuesday announced that the two countries "have agreed in principle" to share military logistics, which will now lead to inking of the Logistics Exchange Memorandum of Agreement in a few months.

Top Indian officials took pains to clarify that the "reciprocal" logistics pact was just meant to facilitate military cooperation and not aimed at forging any sort of a military alliance against China. Top Indian officials clarified that the logistics pact with US was to facilitate military cooperation, especially for the flurry of bilateral combat exercises and humanitarian aid operations in the region.

India and the US will also further bolster maritime security cooperation, which will include stepping up the complexity of its combat exercises and talks on anti-submarine warfare, but there are no plans for joint naval patrols in the contentious South China Sea or elsewhere. "India has not changed its stand (on joint patrols)," defence minister Manohar Parrikar said. Parrikar and his US counterpart Ashton Carter stressed that Logistics Exchange Memorandum of Agreement (LEMOA) did not entail stationing of any US troops on Indian soil, even as officials added that India will not extend support in the event of any US military action against "friendly countries". "We can refuse access to our bases whenever we want," said an official.

But it does overturn the policy of the previous UPA regime, which had steadfastly stonewalled the US push for the so-called "foundational agreements" on logistics, the Communication Interoperability and Security Memorandum Agreement (CISMOA) and the Basic Exchange and Cooperation Agreement for Geo-Spatial Cooperation (BECA) for well over a decade.

Then defence minister A K Antony, backed by the Left and others, had opposed the three foundational pacts on the grounds that they would "compromise" India's traditional strategic autonomy and give "basing rights" to the US military in the country. While the Modi government

still has some reservations on CISMOA and BECA, it says India and the US are institutionalising through LEMOA what already happens “on a case-to-case basis“, as earlier reported by TOI.

Carter, who met PM Narendra Modi and NSA Ajit Doval later in the day, said LEMOA will make it “more routine and automatic“ for the Indian and American forces to operate together. “We have agreed in principle that all the issues are resolved. The text will now be finalised,“ he said.

Meanwhile, defence minister Manohar Parrikar said he had “expressed concern“ to his US counterpart Ash Carter over the F-16 sale to Pakistan. Overall, Pakistan will now have 84-85 F-16s, which are primarily directed against India.

BOOST TO DELHI-WASHINGTON MILITARY TIES

US largest arms supplier to India over last 4 years. US has bagged Indian arms contracts worth over \$14 billion since 2007 & more in pipeline

India & the US hold several military exercises every year. IAF fighters & aircraft on way for Red Flag exercise in Alaska from April 28. Indian, US & Japanese warships to conduct Malabar exercise off Okinawa in June



Defence minister Manohar Parrikar with his US counterpart Ashton Carter on board aircraft carrier Vikramaditya

INDIA & US ON TUESDAY DECIDED TO

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> ➤ LEMOA within a month or two ➤ Set up new bilateral Maritime Security Dialogue ➤ Enhance complexity of military engagements & exercises ➤ Begin navy-to-navy talks on submarine safety & anti-submarine warfare | <ul style="list-style-type: none"> ➤ Conclude pact on exchange of commercial 'white shipping' traffic ➤ Work on two new 'Pathfinder' projects – digital helmet-mounted displays & joint biological tactical detection systems | <p>(mobile generators & NBC warfare protection gear already finalised for co-production)</p> <ul style="list-style-type: none"> ➤ Aggressively take forward ongoing talks on jet engines & aircraft carrier technologies |
|--|---|--|

FOUNDATIONAL AGREEMENTS

Logistics Exchange Memorandum of Agreement (LEMOA)

- Provide **logistic support, refuelling & berthing facilities** for each other's **warships & aircraft** on barter/equal-value exchange basis
- **Will not involve stationing of US troops on Indian soil. Nor will India extend support if US goes to war with "a friendly country"**
- **Good for US forces re-balancing to Asia Pacific.** Indian forces rarely operate far away from their shores but access to **Djibouti & Diego Garcia** could be useful

Communication Interoperability & Security Memorandum Agreement (CISMOA)

- **Technology enabler to help transfer high-tech avionics, encrypted communication & electronic systems to India**
- US says **CISMOA will boost 'interoperability' as well as ensure secrecy of its C4ISR** (command, control, communications, computer, intelligence, surveillance and reconnaissance) systems
- **But fears that US will be able to track & snoop on Indian warships/aircraft** equipped with such systems

Basic Exchange & Cooperation Agreement for Geo-Spatial Cooperation (BECA)

- US says **BECA will help India with advanced satellite & topographical data** for long-range navigation & missile-targeting
- **But India, which has its own satellite imaging capabilities, unwilling for American digital sensors to be positioned on its soil**

U.S. is willing. Why are we overly cautious?

India rejected the US offer of joint patrolling on the high seas with great alacrity. It had China in mind, a country that is almost hostile to us in many ways. It is time that New Delhi shed its timidity

America helping India to become a great power began accidentally in 1991 when General Claude M Kicklighter of the US Pacific Command initiated the broad contours of a layered defence relationship that was bereft of any strategic mooring. Not till New Delhi had tested its nuclear weapons and clinched a civil nuclear deal with the US did the New Framework for US India Defence Relationship come about last year. But above all, the defining strategic partnership containing the Joint Strategic Vision for the Indo-Asia-Pacific. US Defence Secretary Ashton Carter and others like Admiral Harry Harris are urging India to join the United States in making the world a safer place without sacrificing its strategic choices. New Delhi has to act wisely and quickly to catch up with and balance China.

Instead of making up for the 10 years lost during the UPA rule, the Government has shown spectacular ineptitude in reforming and modernising the Armed Forces which are replete with hollowness in critical capabilities. Defence was not even mentioned by the Finance Minister in his Budget presentation and modernisation received short shrift after `11,000 crore was returned unutilised. Defence Minister Manohar Parrikar complimented himself saying he had saved three billion dollars of precious foreign exchange; it speaks volumes for defence planning and making India a credible regional power.

The Army, which is the sword arm of the state involved since independence in counter-insurgency, counter-terrorism and manning the borders, is missing its new assault rifle after the Government cancelled in 2015 a global tender that was floated in 2011 following a decade-long search by the Infantry Directorate for a rifle for the frontline soldier, whose fate has now been handed over to the Defence Research and Development Organisation. Infantry does not even have its authorised and reliable protection gear like body armour. In Sri Lanka, the Indian Peace Keeping Force was equipped with self-loading rifles compared to AK-47 with the LTTE. ‘No new artillery gun for 30 years’ has become a record stuck in the same groove. The new Mountain Strike Corps is being raised ad hoc by stealing from Paul to pay Peter, to the detriment of deterrence against China. The woes are unending.

The Indian Air Force is fast losing its air superiority against Pakistan and rough equivalence against China due to indecisiveness over the high cost of the Rafale, future plans for Tejas and Sukhoi, 5th Generation AMCA and the joint 5th Generations Sukhoi T50 project with Russia. The choice of the 4th Generation fighter with transfer of technology could include the US F/A-18 Super Hornet under the Make in India programme.

The Navy, which is the fighting arm in the Indo-Pacific, is facing huge delays in its conventional submarine programmes. The saving grace amidst the clutter of modernisation is the focus on indigenisation, the transition towards which, though, could have been better planned to minimise voids and capability gaps. Previously blacklisting of companies resulted in huge delay of projects. Now, shifting projects to the DRDO and Make in India will do the same.

The jury is out on the latest Defence Procurement Procedure, which first came out in 2002 and replaces the last edition of 2013. Chapter 7, dealing with Strategic Partners and Partnerships, is to be notified separately. Overall, it promises to provide positive guidelines for defence acquisition. Experts are questioning private sector strategic partners enjoying preferential status in major defence projects.

The Confederation of Indian Industry has lauded the DPP in taking the defence sector to the heart of manufacturing through Make in India. It is estimated that defence offset obligations will result in \$14 billion of asset-creation by foreign equipment manufacturers by 2028. A re-look is required in FDI, where raising the ceiling from 26 per cent to 49 per cent in 2015 has attracted little or no investment. Only by raising the stakes to 75 per cent and more will technology be forthcoming. The ultimate test of DPP will be streamlining in planning and decision-making for contracts to materialise and be implemented so that Rifleman Sukhinder Singh gets a modern rifle and protective gear among other capabilities on time. Coal Secretary Anil Swaroop noted last week that we blame politicians for all ills. Isn't it true that five Cs (CBI, CVC, CAG, CICI and Courts) contribute towards deterring decision-making?

Given the bleak defence development and production scenario, why are we dragging our feet when the world's most advanced country in defence technology and military capability is offering a strategic handshake? Ashton Carter has been working since 2012 on the US-India Defence Technology and Partnership Act, which was institutionalised recently by notification to amend the US Arms Export Control Act to give equivalence to India of status enjoyed by US treaty allies. US Department of Defence's India Rapid Reaction Cells is the only country-specific unit under Defence Trade and Technology Initiative to deepen high-tech cooperation and move towards co-development and co-production of hi-tech platforms.

The history of estranged India-US relations will make New Delhi ponder. Carter has explained that, while US relations with Pakistan are limited to counter-terrorism, with India the agenda is global. He cites US pivot to Asia and India's Act East policy as a reflection of convergence of interests and challenges. He has underlined India's quest for multi-alignment without losing its strategic autonomy. What Carter is saying is: Here is our hand; you hold it the way you like. The US has become the largest arms supplier to India — overtaking Russia, Israel and France. India and the US hold more than 50 exercises annually and have resumed Air Force exercise Operation Red Flag after an eight-year gap.

On Monday, Carter and Parrikar concluded talks on three vital defence pacts which have been hanging fire for more than a decade. The Logistics Support Agreement permits replenishments from each other's bases and will be signed in the coming months under a new acronym. CISMOA will enable India to obtain high-tech radio and satellite communication equipment that will enhance the versatility of platforms already acquired. The third is BECA, which entails questions of sovereignty.

US has made India-specific defence upgradation agreements and other offers that require to be taken up without any further delay. India rejected the US offer of joint patrolling on the high seas with great alacrity. It had China in mind, a country that is almost hostile when it comes to helping Pakistan to stand up to India. India should not fight shy of seeking help from the US to become a great power...for its own sake.

अमेरिकी रक्षा मंत्री का भारत के साथ सैन्य प्रौद्योगिकी तालमेल पर जोर

पणजी, 12 अप्रैल (भाषा)। अमेरिकी रक्षा मंत्री एश्टन कार्टर ने कहा है कि भारत और अमेरिका को अपनी ऐसी सैन्य प्रौद्योगिकियों में तालमेल बिटाने के लिए कड़ी मेहनत करनी होगी, जिनका विकास उन्होंने अलग-अलग किया है।

मोरमुगाव पोर्ट ट्रस्ट (एमपीटी) पर ठहरे अमेरिकी पोत यूएसएस ब्लू रिज पर क्रू को संबोधित करते हुए कार्टर ने कहा, 'हमारे पास भारत-अमेरिकी रिश्तों पर काम करने की वजह ऐतिहासिक है। आप याद करें कि भारत का जन्म सात दशक पहले हुआ था और उसकी नीति अमेरिका से जुड़ने वाली नहीं थी।'

कार्टर ने कहा, 'इसका मतलब यह है कि हमारी सेनाएं अलग-अलग विकसित हुईं, हमारी प्रौद्योगिकी प्रणालियां अलग-अलग विकसित हुईं और अब जब हमें उनके साथ मिलकर काम करना है, तो तालमेल बिटाने के लिए कोशिशें करनी होंगी। हमें इस पर काम करना होगा। इसलिए मैं यहां हूँ, इसलिए आप यहां हैं।'

कार्टर और रक्षा मंत्री मनोहर पर्रिकर ने कल पोत का दौरा किया था। यह पोत सोमवार मुंबई से यहां पहुंचा था। भारत के साथ तालमेल बिटाने के अमेरिका के तौर-तरीकों के बावत कार्टर ने कहा, 'यहां एक देश है।'

पंजाब केसरी

13 अप्रैल, 2016

पाक को अमरीकी एफ-16 विमानों की बिक्री पर भारत नाराज

नई दिल्ली, (भाषा): भारत ने पाकिस्तान को एफ-16 विमान बेचे जाने को लेकर अमरीका से नाखुशी जताई, हालांकि वाशिंगटन ने कहा है कि ये विमान आतंकवाद विरोधी अभियानों के लिए दिए जा रहे हैं। भारत दौरे पर आए अमरीकी रक्षा मंत्री एश्टन कार्टर के साथ बातचीत के बाद रक्षा मंत्री मनोहर पर्रिकर ने कहा कि उन्होंने अमरीका द्वारा पाकिस्तान को एफ-16 विमान बेचने का मुद्दा उठाया। इससे पहले भी भारत ने पाकिस्तान को लड़ाकू विमान बेचे जाने को लेकर विरोध दर्ज कराते हुए कहा था, "हम उनके इस तर्क से असहमत हैं कि इस तरह के शस्त्र का हस्तांतरण आतंकवाद का मुकाबला करने के लिए हो रहा है।" कार्टर ने कहा कि अमरीका उसी तरह से भारत का 'विश्वसनीय साझेदार' बनने का लक्ष्य देख रहा है जैसे रूस लंबे समय से रहा है। अमरीका के



भी पाकिस्तानी सरजमीं से पैदा होने वाले आतंकवाद का पीड़ित होने की बात पर जोर देते हुए उन्होंने कहा कि जो लोग भारत में पठानकोट हमले जैसे आतंकवाद में शामिल हैं 'उनको न्याय की जद में लाया जाना चाहिए और जवाबदेही तय की जानी चाहिए।' कार्टर ने कहा-यह अमरीका का रुख है और इसको लेकर कोई सवाल नहीं होना चाहिए। उन्होंने यह भी कहा कि इस तरह की परियोजनाएं, जिन पर अमरीका और भारत चर्चा कर रहे हैं, उनसे दोनों देशों के समाज को आतंकवादियों से सुरक्षित करने में मदद मिलेगी।

Doval to visit China over border talks

National Security Adviser Ajit Doval Said He Was Hopeful of A Positive Outcome As India Was All For Mutually Beneficial Relations with China

National security adviser Ajit Doval will visit Beijing on April 21-22 to hold the 19th round of special representative talks on the boundary issue with his Chinese counterpart, state councillor Yang Jiechi. The visit comes against the backdrop of a declining number of border transgressions by the Peoples' Liberation Army (PLA) across the 3,488-km Line of Actual Control (LAC) and will follow that of Defence Minister Manohar Parrikar who will be in Beijing from April 17 to 18.

Doval told HT said he was hopeful of a positive outcome as India was all for mutually beneficial ties with China. Doval had postponed his visit to China at the last moment in January.

The visit comes at a time when the LAC is quiet on both western and eastern sectors, barring PLA activity due to difference in perceptions over border alignment in Pangong Tso in eastern Ladakh. While China has significantly upgraded its border infrastructure across Arunachal Pradesh, the transgressions by PLA have gone down with armies on both sides confined to patrolling within their own territory.

Doval is also expected to talk about terrorism and trade apart from working towards a permanent solution to the boundary issue.

Though India is committed to improving ties with China, it has serious concerns over Beijing's relationship with Pakistan. New Delhi feels the \$46-billion China Pakistan Economic Corridor impinges on India's security, particularly as it involves Beijing upgrading infrastructure in Pakistanoccupied Kashmir.

Apart from the close military hardware relationship between the two countries, New Delhi has legitimate maritime security concerns over Beijing developing the Gwadar sea port on the mouth of the Strait of Hormuz in the restive Balochistan.

India's other concern is the involvement of China in Quad talks with Taliban to stabilise Afghanistan in the near future with Pakistan and the US being the other two players.

China angry over G7 statement on South China Sea

We urge the G7 member states to fully respect the efforts made by countries in the region, stop making irresponsible remarks and all irresponsible actions LU KANG, China's foreign ministry spokesperson

BEIJING: A fuming China on Tuesday said developed countries led by the US are taking sides on the South China Sea dispute after foreign ministers of G7 issued a statement opposing any "intimidating and coercive" actions in the region.

Monday's statement by the foreign ministers of the grouping of developed nations did not name any country involved in the maritime dispute but gave enough indications that it was referring to China.

Expectedly, the statement caught Beijing's attention. What would have added to the fire was that it was issued in Japan, with which China has tense relations steeped in history of colonisation and violence.

“We urge the G7 member states to honour their commitment of not taking sides on issues involving territorial disputes,” foreign ministry spokesperson Lu Kang said told a regular news conference on Tuesday.

The G7, Lu said in his terse reaction, should focus on the recovery of the global economy, which remains weak.

China is locked in disputes with several countries such as the Philippines, Vietnam, Malaysia, Brunei, Taiwan and Japan over the ownership of islands and reefs in a maritime region said to be floating on rich oil and gas reserves.

The statement issued by the US, Britain, Italy, Germany, Canada, France and Japan in Hiroshima expressed their “strong opposition to any intimidating, coercive or provocative unilateral actions that could alter the status quo and increase tensions”.

They also reiterated their “commitment to the freedoms of navigation and overflight”.

Lu said China’s stance on the East and South China Seas is “consistent and clear”. It is within “China’s sovereignty to build structures on some of its Nansha islands and reefs and that there is no problem with freedom of navigation and overflight in the East and South China Seas”, he added.

“We urge the G7 member states to fully respect the efforts made by countries in the region, stop making irresponsible remarks and all irresponsible actions, and truly play a constructive role for regional peace and stability,” Lu said.

Deccan Herald
13 Apr, 2016

NASA's planet-hunting Kepler probe taken out of emergency

Washington: Nasa scientists have successfully recovered the planet-hunting Kepler spacecraft after it had gone into emergency mode about 75 million miles from earth.

The spacecraft, that hunts for earth-like planets orbiting other stars, reached a stable state with the communication antenna pointed toward earth, enabling telemetry and historical event data to be downloaded to the ground.

During a scheduled contact on April 7, mission operations engineers discovered that the Kepler spacecraft was in Emergency Mode (EM) - the lowest operational mode which is fuel intensive.

The spacecraft is now operating in its lowest fuel-burn mode, Nasa officials said.

The mission has cancelled the spacecraft emergency, returning the Deep Space Network ground communications to normal scheduling, they said.

Once data is on the ground, the team will thoroughly assess all on board systems to ensure the spacecraft is healthy enough to return to science mode and begin the K2 mission's microlensing observing campaign, called Campaign 9.

Earth-based observatories participating in Campaign 9 will continue to make observations as Kepler's health check continues.

The K2 observing opportunity for Campaign 9 will end on July 1, when the galactic centre is no longer in view from the vantage point of the spacecraft.

After data was downlinked to the ground, the spacecraft was placed in what is termed Point Rest State (PRS).

While in PRS, the spacecraft antenna is pointed towards earth and it operates in a fuel-efficient mode, with the reaction wheels at rest.

Milky Way

The Emergency Mode began about 14 hours before the planned manoeuvre to orient the spacecraft towards the centre of the Milky Way for Campaign 9.

The team has therefore ruled out the manoeuvre and the reaction wheels as possible causes of the EM event.

Deccan Herald
13 Apr, 2016

Averting 'genetic destiny' of diseases

Paris: Scientists said Monday they had found a handful of healthy people each carrying a genetic mutation that should have condemned them to crippling disease or death.

The discovery, made by scanning the genomes of nearly 600,000 normal people, opens up a new approach to finding treatments for cystic fibrosis and dozens of other rare and incurable conditions linked to specific variations in a single gene.

Up to now, medical science assumed that anyone unlucky enough to have one of these so-called Mendelian mutations -- named after the 19th-century founder of modern genetics -- was doomed.

"Most genomic studies focus on finding the cause of a disease, but we see tremendous opportunity in figuring out what keeps people healthy," said Eric Schadt, a professor at the Icahn School of Medicine in New York City, and a main architect of the study.

"Millions of years of evolution have produced far more protective mechanisms than we currently understand," he said in a statement.

Together with colleagues Stephen Friend and Rong Chen, Schadt led a team of 30 researchers in sifting through data on nearly 900 genes from each person's genome, looking for the telltale mutations leading to any of hundreds of distinct genetic diseases.

A rigorous process of winnowing left them with 13 individuals who had gene variants that would normally result in one of eight debilitating conditions.

Besides cystic fibrosis, which inflicts severe damage on the lungs and the digestive system, these included Pfeiffer syndrome, characterised by a severe deformation of skull bones, and Smith-Lemli-Opitz syndrome, a disorder linked to multiple malformations and intellectual disability.

The results were published in *Nature Biotechnology*.

"These rare individuals must possess some combination of factors -- genetic or environmental -- that protects them from an otherwise crippling disease," Daniel MacArthur, a genomics researcher at Massachusetts General Hospital who was not involved in the study, commented in the same journal.

The next step would be to locate enough cases of people who have survived to adulthood despite these genetic flaws to identify -- and eventually duplicate -- these protective mechanisms.

Until recently, it would have been technically unfeasible to scan hundreds of thousands of human genomes in this manner.

"This study demonstrates the power of using big data to ask new biological questions," said Anne Wojcicki, co-founder and CEO of personal genomics company 23andMe, which participated in the project by providing access to data on more than 400,000 of its customers.

In a frustrating twist, however, the researchers were unable to follow up with any of the 13 people found because of limitations in the consent policies they had signed.

Experts commenting on the study said this was a regrettable shortcoming that limited the value of the findings and would need to be changed in future research.

But commentators agreed that the idea of scanning large populations to find individuals who are healthy despite carrying gene variants known to cause disease holds great promise.

"Achieving this goal will require incredibly large sample sizes," measured in millions not thousands, said MacArthur.

It will also need what he called "genetic superheros" to step up and donate their genomic and clinical data so researchers can pick through them.

Deccan Herald
13 Apr, 2016

'Smart hands' closer to becoming touchscreen

London: You may be soon able to use your skin as a touchscreen, as researchers including one of Indian- origin have successfully created tactile sensations on the palm using ultrasound sent through the hand.

The study by scientists from University of Sussex in the UK is the first to find a way for users to feel what they are doing when interacting with displays projected on their hand.

This solves one of the biggest challenges for technology companies who see the human body, particularly the hand, as the ideal display extension for the next generation of smartwatches and other smart devices, researchers said.

Current ideas rely on vibrations or pins, which both need contact with the palm to work, interrupting the display.

This new innovation, called SkinHaptics, sends sensations to the palm from the other side of the hand, leaving the palm free to display the screen.

The device uses 'time-reversal' processing to send ultrasound waves through the hand. This technique is effectively like ripples in water but in reverse - the waves become more targeted as they travel through the hand, ending at a precise point on the palm, researchers said.

It draws on a rapidly growing field of technology called haptics, which is the science of applying touch sensation and control to interaction with computers and technology, they said.

According to Sriram Subramanian from University of Sussex who led the study, technologies will inevitably need to engage other senses, such as touch, as we enter what designers are calling an 'eye-free' age of technology.

"Wearables are already big business and will only get bigger. But as we wear technology more, it gets smaller and we look at it less, and therefore multisensory capabilities become much more important," Subramanian said.

"If you imagine you are on your bike and want to change the volume control on your smartwatch, the interaction space on the watch is very small. So companies are looking at how to extend this space to the hand of the user," he said.

"What we offer people is the ability to feel their actions when they are interacting with the hand," he added.

16-year-old student invents low-cost hearing aid for needy

Houston: A 16-year-old Indian-American boy has created a low-cost hearing aid costing USD 60 to help those who cannot afford expensive devices.

Mukund Venkatakrisnan of Kentucky's Louisville city worked on the device for two years and presented it at the Jefferson County Public Schools Idea Fest and recently won first place in the Kentucky State Science and Engineering Fair.

The device, which can be used with even the cheapest set of headphones, is built to first test hearing by playing several different sounds at seven different frequencies through headphones. It then programs itself to be a hearing aid, amplifying volume based on the test results.

"It eliminates the need for a doctor. It is really just amplifiers, just increase the volume based on how much hearing loss you have and it is crazy that they cost USD 1,500 each, when you can do it for USD 60," Mukund, DuPont Manual High School student, said.

He said the processor responsible for amplifying volume by increasing the volume of an incoming signal, was the most expensive part - about USD 45. Other parts cost about USD 15.

Mukund was inspired to invent the aid during his visit to his grandparents in India two years ago. He was tasked with helping his grandfather get tested and fitted for a hearing aid. He saw that it was a costly and difficult process. "Since audiologists are specialists, even finding and getting an appointment with one was hard.

Software flaws used in hacking more than double, setting record

San Francisco: The number of previously unknown software flaws used by hackers more than doubled last year, a new report says, in another sign of the increasing sophistication of cybercrime and online espionage. Secret vulnerabilities in computer programs are especially prized by criminal gangs, law enforcement and spies because software vendors have not been warned and so cannot publish fixes.

In 2015, 54 such holes came to light and were deployed by hackers, according to a report published on April 11 by the largest security software vendor, Symantec Corp. That is up dramatically from 24 the year before and 23 the year before that; the next-highest total over the past 10 years was 15 in 2007. Symantec's total of "zero-day" or unknown vulnerabilities includes both flaws that were discovered because they were used by top-flight hackers who left tracks and those that were revealed to the public at the same time as the software maker. In 2015, electronic files named "Hacking Team" were dumped on the Internet, including six zero-days that criminals quickly made use of.

Thousands of other flaws were identified as usual last year by vendors, outside researchers, and government agencies. The vendors develop and issue patches, either announcing the flaws or pointing to them by virtue of the fixes. Since criminals and others immediately take advantage of flaws to reach into unfixed machines, users must patch rapidly and completely or face being hacked.

Though most attacks happen because of inadequate patching, the rapid spread of new flaws through "exploit kits" sold in underground forums has allowed zero-days to be obtained by more people, including those installing ransomware and programs for stealing financial logins. Four of the five most-used zero-day vulnerabilities last year were in Adobe Systems Inc's Flash software, which can be used as a standalone program or a plug-in for various Web browsers, not all of which

automatically update with Flash patches. Symantec said it expected Flash to become less popular as platforms stop supporting it, making it less of a bonanza for hackers. Adobe said it had improved its security response. “Flash Player is one of the most ubiquitous and widely distributed pieces of software in the world, and as such, is a target of malicious hackers,” the company said via email. “With regards to zero-days, we’ve been able to expedite the patching process to just days.” — Reuters

The Asian Age
13 Apr, 2016

Experts: New type of ransomware is very dangerous

Washington: An unusual strain of virus- like hacker software that exploits computer server vulnerabilities - without requiring human interaction - is a leading example of a new generation of “ransomware,” according to a new report by Cisco Systems Inc.

Hackers use such software to target largescale networks and hold data hostage in exchange for bigger payments. Such a strain, known as Samas or samsam, hit the MedStar Health Inc. hospital chain last month. In such attacks, hackers target backup files and records, encrypting them to make them an unreadable gobbledygook of characters.

To regain access, users without additional safe backups who don't want to lose critical files often pay the ransom, typically \$ 10,000 to \$ 15,000 for an entire network or hundreds to a thousand or so dollars for a single computer. The ability to demand payment in bitcoin, a difficult- totrace virtual currency not controlled by any country, was “basically the birth of ransomware” and has helped drive its success since the currency's introduction in 2009, said Craig Williams, a senior technical leader at Cisco's Talos security research group.

Samas exploits vulnerabilities giving hackers a way into JBoss application servers that are frequently used by some of the largest corporations. Once inside, the hackers sometimes implant a tool that steals credentials, allowing it to spread through the system, and encrypt scores of digital files along the way.

Ransomware has become a new targeted attack, with thousands of variants emerging over the last six months, said Dmitri Alperovitch, cofounder and chief technology officer of CrowdStrike Inc. Most ransomware still requires a human to click a link or open an infected email attachment, but Cisco's report warned that “the age of self- propagating ransomware, or cryptoworms, is right around the corner.”

The Asian Age
13 Apr, 2016

A toothpaste that hardens your teeth while you sleep

Washington DC, April 12: What if you could fix your teeth while sleeping? A team of researchers has come up with a new toothpaste ingredient that hardens your teeth while you doze.

The new BioMinF toothpaste ingredient, developed by Queen Mary University of London, puts back the lost minerals from tooth enamel and helps prevent decay and treat sensitivity while you sleep and is available online and from specialist dental distributors now. It is expected to be available through high street stores by the end of the year.

The ingredient provides a new tooth repair technology which will bring relief to the millions of adults and children around the world who are prone to tooth decay and sensitivity. Using remineralising toothpaste makes teeth far more resistant to attack from acidic soft drinks like fruit juices and sodas. It is also much more effective than conventional toothpastes where the active ingredients, such as soluble fluoride, are washed away and become ineffective less than two hours

after brushing,” said researcher Robert Hill, who led the team which developed BioMin and won the 2013 Armourers and Brasiers Venture Prize.

Professor Hill added that the technology behind BioMin is not however exclusively designed for toothpastes. It can also be incorporated in other professionally applied dental products such as cleaning and polishing pastes, varnishes and remineralising filling materials. Cofounder of BioMin, David Gillam, said that tooth sensitivity is caused by open tubules in the teeth.

BioMin containing toothpastes are effective by sealing the tubules with acid resistant fluorapatite which act as a barrier to hot and cold being transmitted inside the tooth. A fluoride free version of BioMin is also being developed for individuals who do not want or need fluoride toothpaste.

The Times of India
13 Apr, 2016

Times Group chairman Indu Jain, Rajinikanth and 50 others receive Padmas from President

W DELHI: Times Group chairman Indu Jain, actors Rajinikanth and Priyanka Chopra, former US ambassador Robert Blackwill and tennis pro Sania Mirza were among the 52 eminent citizens who received Padma awards from President Pranab Mukherjee on Tuesday.

Former DRDO chief V K Aatre, Telugu daily Eenadu's chief editor Ramoji Rao, Rajinikanth, renowned vocalist Girija Devi and eminent oncologist Dr V Shanta were honoured with the Padma Vibhushan. Jain is an internationally renowned philanthropist and educationalist who has worked towards inclusive and responsible growth. She founded the Times Foundation in 2000 which has garnered critical acclaim for its pioneering activities in development and community service. She is also president emeritus of Bharatiya Jnanpith and champions the cause of women.

Maruti Suzuki chairman Ravindra Chandra Bhargava and sculptor Ram Vanji Sutar were others awarded the Padma Bhushan. Speaking after the ceremony, Blackwill, who was instrumental in closer ties between India and the US, said, "It is an enormous honour to get this award. It symbolises all Americans and Indians who helped transform the India-US relationship from 2001 onwards, and is for all of them. This is the greatest professional moment of my life."

Priyanka Chopra was equally ecstatic. The 33-year-old former Miss World, who flew down to India from her 'Baywatch' shoot in Los Angeles to receive the honour, said Padma Shri was the best award. "This is the best award I have ever received. Thank you so much. I am grateful," she said.

Her film industry colleague Udit Narayan, who received the Padma Bhushan, knelt and touched his forehead to the ground after receiving the award. "I am from Mithila, Bihar, and I was saluting my place of birth," he said, adding that he would like to continue singing for new stars. Eminent lawyer Ujjwal Nikam, ex-president of Editors Guild of India Dharendra Nath Bezboruah, renowned novelist from Karnataka S L Bhyrappa, Puducherrybased social worker Madeleine Herman de Blic and president of Bodo Sahitya Sabha Kameswar Brahma were among the 40 eminent persons given the Padma Shri.

Folk artiste from Chhattisgarh Mamta Chandrakar, scientist Dipankar Chatterji, chairman of Akshaya Patra Foundation Madhu Pandit Dasa, renowned sports commentator Sushil Doshi and orthopaedic surgeon John Ebnezar were honoured with the Padma Shri. The function, held in Rashtrapati Bhavan's Durbar Hall, was attended by Vice-President Hamid Ansari, PM Narendra Modi, home minister Rajnath Singh, BJP chief Amit Shah and several Union ministers among others.