Amazon Orders 100K Electric Vans from Rivian
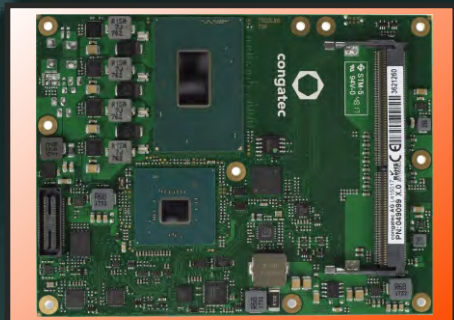
From EV startup to potential market leader

Motorola EC
Emerson EC
Artesyn EC
SMART EC

SMART Global Holdings Announces Entry into Embedded Computing Market Through Acquisitions of Artesyn Embedded Computing and Inforce Computing

THALES Railway Driverless
World premiere on the railways:
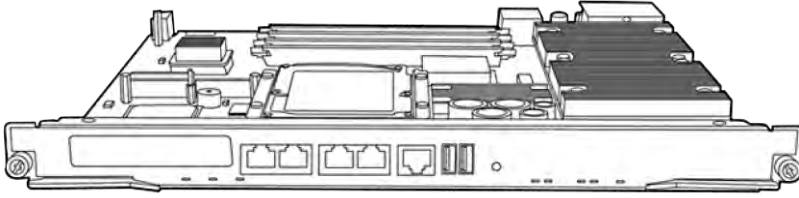## 5G + Vodafone + Thales

congatec presents 10 new COM Express high-end modules for embedded edge computing
The latest and greatest from Intel®

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to $9-an-Hour Engineers

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Daniel Dierickx
CEO & co-Founder
at e2mos
Acting Chief Editor

Over 3 Decades Semiconductors & Computer Systems Market Expertise

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Owner Nr 4 of Motorola Embedded Computing Business in 12 Years

From Motorola to Emerson to Artesyn (Platinum Equity) and now to SMART Global Holdings.

Motorola Embebbed Computing was very well known all over our planet with its famous VMEbus introduced in 1981 and did envoy over 20 years tremendous success, later the situation become a little bit fuzzy for the customers. VME is still very strong mainly in Mil/Aero & Industrial, there are 30 vendors and new products introduced in 2019. We (e2mos) plan to publish our experience of 40 years Embedded Computing Business. Questions mgt@e2mos.com

Please note that Artesyn Embedded Power (also Platinum Equity) was sold to Advanced Energy, see Embedded Systems World of May-Jun 2019, Page 3.

SMART Global Holdings Announces Entry into Embedded Computing Market Through Acquisitions of Artesyn Embedded Computing and Inforce Computing

July 09, 2019 16:05 ET | **Source:** SMART Global Holdings, Inc. | Original Press Release CLICK HERE

Extends Product Offering into Embedded Computing for Federal, Defense, Industrial, Edge Computing, Consumer and Communications OEM Markets

NEWARK, Calif., July 09, 2019 (GLOBE NEWSWIRE) -- SMART Global Holdings, Inc. ("SMART") (NASDAQ: SGH) today announced that it has entered the embedded computing market through two acquisitions; Artesyn Embedded Computing, the embedded computing business of Artesyn Embedded Technologies, and Inforce Computing.

The acquisitions are expected to be immediately accretive to EPS.

"These acquisitions represent another milestone in SMART Global's strategy to drive growth and earnings through synergistic M&A," commented Ajay Shah, Chairman and Chief Executive Officer of SMART Global Holdings. "These will become part of the SMART Specialty Computing business as the products and customers added are complementary to our existing business, expand SMART's target market opportunity and enable the company to cross sell its existing products to new customers."

Artesyn Embedded Computing
Artesyn Embedded Computing, Inc. ("Artesyn EC"), a private company based in Tempe, Arizona, is a leading provider of embedded computing solutions based on open standards such as **ATCA**®, **VMEbus**, **PCI Express** and **computer-on-module**, with a large portfolio of long-life-cycle products, strong supplier partnerships and long-standing customer relationships.
"Artesyn EC strengthens our product offerings and high-reliability technologies in embedded computing requirements," noted Mr. Shah, "We are also excited to have Artesyn EC's experienced engineering, sales and marketing teams join SMART Global."
As part of the SMART Specialty Compute & Storage Solutions ("SCSS") line of business it will serve a broad range of Defense, Industrial IoT ("IIoT"), Edge Computing, and Communications OEM customers. Artesyn Embedded Computing will become SMART Embedded Computing and leverage our core operational capabilities to gain a foothold at scale in embedded computing markets.
Stephen Dow, President of Artesyn EC, stated, "Today's announcement marks the beginning of an exciting new chapter for Artesyn EC. We look forward to being able to leverage SMART's established global operations and supply chain, and to invest in our sales channels to enable growth and meet the needs of our expanding markets."
SMART has agreed to acquire Artesyn EC for $80 million in cash from the balance sheet. Approximately $10 million of performance-based additional consideration will be paid if certain agreed-upon targets are achieved over the second half of calendar 2019.

Inforce Computing
SMART Global Holdings also announced today that it has acquired Inforce Computing, Inc. ("Inforce"), a privately held provider of modular embedded computing and IoT solutions targeting applications in Medical Imaging, Video Conferencing, AR/VR Computing, IIoT, Commercial Drones and Robotics.
"We look forward to leveraging Inforce's engineering talent to further develop leading edge **system-on-module** and **single board computer** products for IoT applications," added Mr. Shah.
Inforce Computing, based in Fremont, CA, is a fast growing developer of high-performance production-ready **ARM**® ISA based embedded computing platforms for IoT applications. Enhanced by key partnerships with companies such as **Qualcomm** and **Marvel**l, Inforce designs and manufactures Snapdragon™ and Marvell® processor-based system-on-modules ("SOMs"), single board computers ("SBCs"), and development kits. Inforce's embedded technologies are enabling the next generation of connected devices.
"Joining SMART is a strong next step in the progression of Inforce," said Jagat Acharya, Chief Executive Officer of Inforce. "By joining SMART, we will be able to scale up and serve our OEM customers' high volume needs through SMART's global reach and to accelerate our investments in sales, marketing, engineering and new product development."
SMART has agreed to acquire Inforce for a total of $12 million in cash and equity consideration. Inforce will also become a part of SCSS.

MORE: www.smartgh.com

Amazon Orders 100K Electric Vans from Rivian

From EV startup to potential market leader.

CONTRIBUTORS David Mantey, Alex Shanahan | 23-Sep-2019
Source: https://www.ien.com/product-development/video/21088297/amazon-orders-100k-electric-vans-from-rivian?lt.usr=38943702

Back in November 2018, we introduced you to Rivian Automotive. The startup electric vehicle was hailed as the "Tesla of Trucks" as its R1T electric pickup truck, with a range of up to 410 miles on a single charge, impressed the crow at the LA Auto Show.

Since then, Rivian purchased a shuttered Mitsubishi plant in Normal, IL and plans to hire as many as 1,000 employees. The company has also received significant investments: a $700M investment round let by Amazon in February 2019, $500 million from Ford in April 2019 and $350 million from Cox Automotive two weeks ago.

Last week, Rivian went from EV startup to potential market leader as Amazon announced an order for 100,000 electric delivery vans. That investment back in February is starting to make a little more sense. The announcement came as part of Amazon Chief Jeff Bezos's commitment to making the company carbon neutral by 2040.

The company currently has around 130 employees in Normal but has yet to begin production. According to a report in the Chicago Tribune, 10,000 vans will be on the road by late 2022 with the full 100,000 in operation by 2030. The first electric delivery van will begin delivering packages as soon as 2021.

Based in Plymouth, Michigan, the company was founded in 2009 but has yet to produce a single vehicle.
The van order won't shakeup Rivian's plans to deliver the first mass-market electric pickup. According to a Reuters report, Rivian will begin selling the R1T by the end of next year.

Rivian is the Tesla of Trucks

Many have called automotive startup Rivian the Tesla of trucks because the company is developing high performance electric trucks and SUVs that are really easy on the eyes.

This week, at the LA Auto Show, the company unveiled two new all-electric vehicles: the R1T electric pickup truck and the all-electric R1S SUV. Both are targeted to enter production at the company's facility in Normal, Illinois in 2020. The initial vehicles will have a 180 kilowatt-hour battery pack with a range of 410 miles. A smaller 135 kilowatt-hour battery pack will also be available out of the gate and a 105 kilowatt-hour option with a range of 250 miles will be available a year later.

According to the company, the truck will have enough power to climb 45-degree slopes and tow more than 11,000 pounds.

The SUV, which can seat seven, will start at $72,500 while the pickup, which can seat five, will be slightly cheaper at $69,000.

The vehicles have two body-mounted motors per axle that precisely control each wheel. The body mounted motors also mean that it has no engine, so where the engine once was is now a storage compartment or front trunk. The truck also has a cool storage cubby that runs the width of the truck and is located between the seats and the bed. The truck will go from 0-60 in 2.8 seconds, 0-100 in less than seven seconds, and top out at 125 mph.

Now, what remains to be seen is whether or not Rivian will be more like Tesla, and we'll actually see the cars on the road, or Faraday, which is having a rougher go of it. Hopefully the team can pull it off without having to put in 80-100-hour workweeks.

Pro-Active Engineering Acquires Apex Embedded Systems

Posted on September 03, 2019 | https://www.proactivepcb.com/ | https://apexembeddedsystems.com/

Pro-Active Engineering, Inc., (Wisconsin USA), a leading electronic design and manufacturing service provider in Sun Prairie, WI, announced that it has acquired Apex Embedded Systems LLC, a Monona, WI based engineering firm. The purchase expands Pro-Active Engineering's design engineering and software development capabilities to better serve the needs of its customers.

Apex Embedded Systems has provided electronic hardware engineering, software engineering, sustaining engineering and IIoT solutions for over 27 years. Apex will continue to honor existing agreements to their customers across the industrial, scientific, research, military, and aerospace industries through Pro-Active Engineering.

 "It is a great pleasure to have Mike Ihm and his team from Apex Embedded Systems join our design team at Pro-Active Engineering," said Toby Klusmeyer, founder and president of Pro-Active Engineering. "Thanks to this, my dream of providing best in class product design services rings true."
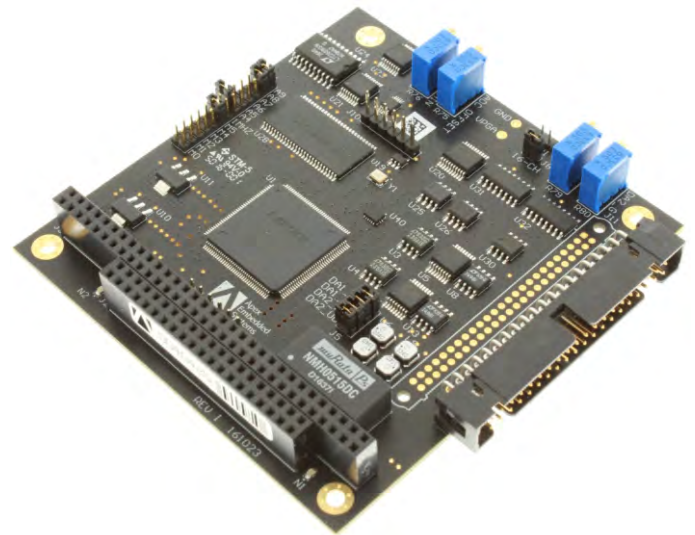
Apex PC/104 modules for rugged applications. We specialize in analog and digital I/O. Products intended for long life applications.

THALES Railway Driverless 29 Sep 2019
World premiere on the railways: 5G, Vodafone and Thales

World premiere on the railways: For the first time, a train crosses the tracks as if by ghost. Driverless but connected via the new mobile technology 5G. Vodafone and Thales drive a train remotely on the Smart Rail Connectivity Campus in the Ore Mountains.

The Düsseldorf-based telecommunications company has built one of the first 5G stations in Germany in the Ore Mountains, and Thales is making its Lucy laboratory train available for the demonstration.

The new mobile phone technology enables bandwidths of more than 500 megabits per second on the train traffic test track and reduces latency, i.e. the delay with which data is transmitted, to less than 10 milliseconds.

In the future, trains could be remotely controlled, for example, for the transport of goods.

New Embedded Box PC from Kontron: Kbox B-202-CFL for highest performance and maximum flexibility

KBox B-202-CFL with powerful 8th Gen Intel® Core™ i3/i5/i7 processors – compact design, quiet operation and maximum expandability

Augsburg, Germany, September 26, 2019 – Kontron, a leading global provider of IoT/Embedded Computing Technology (ECT), today announced the addition of the KBox B-202-CFL to its Embedded Box PCs family.

The KBox B-202-CFL offers high performance with maximum expandability and low noise level (maximum 34 dB(A)). Due to 8th Gen Intel® Core™ i3/i5/i7 processors and the Intel® Q370 Express Chipset, the KBox B-202-CFL handles CPU-intensive processes and large amounts of data effortlessly. Among the highlights are the expansion options, which include up to two PCIe x8 cards or one PCIe x16, so that graphics or network cards can be easily added. This makes the new KBox B-202-CFL ideal for demanding applications such as high-end image processing, SCADA/MES applications, artificial intelligence and machine learning.

In addition, it is EN55032 Class B certified, which means it meets stricter RFI limits than Class A. This makes it suitable not only for use in industrial environments, but also for use in residential and business areas or in their immediate vicinity. Along with its modern design this makes the KBox B-202-CFL the ideal computer for architecture and graphics offices as well as music studios.

The core of the KBox B-202-CFL is a motherboard in the Mini-ITX form factor (170x170 mm) with a CPU with up to six processor cores: Depending on requirements, three 8th Gen Intel® Core™ i3/i5/i7 processors can be selected.

With the KBox B-202-CFL, a 2.5" SSD and an M.2 SSD can be chosen as mass storage. As an alternative to the 2.5" SSD, a Raid system with 2x M.2 SSD can also be installed. Further options with up to four mass storage devices are available on request. The system features two DisplayPorts V1.2 as well as a DVI-D connector. Numerous interfaces such as four USB 2.0, four USB 3.1 Gen 1 and two USB 3.1 Gen 2 ports as well as a serial interface (COM1/RS232) ensure high flexibility. In addition, the system is equipped with two Ethernet ports 10/100/1000 MBit/s (WoL).

The new KBox B-202-CFL is optionally available with a DVD drive. The Box PC supports Windows® 10 IoT operating system. The compact housing of the KBox B-202-CFL with the dimensions 190x120x190 mm is made of hot-dip galvanised sheet steel (EN10215) and aluminium. The Box PC is equipped with an almost silent fan and can be operated at a temperature range from 0°C to plus 45°C.

For more information please visit:
https://www.kontron.com/products/systems/embedded-box-pc/kbox-b-series/kbox-b-202-cfl.html

congatec presents 10 new high-end modules for embedded edge computing
The latest and greatest from Intel®

Deggendorf, Germany, 17July, 2019 * * * congatec – a leading vendor of standardized and customized embedded computer boards and modules – today announced 10 new COM Express Type 6 modules featuring the best and latest Intel® embedded processor technology. The four Intel® Xeon®, three Intel® Core™, two Intel® Celeron® and one Intel® Pentium® processors are all based on the same Intel microarchitecture (codenamed Coffee Lake H). This enables congatec to provide all 10 new processors on one COM Express module design – the conga-TS370. A total of 14 processor module variants are now available on this single microarchitecture, offering extremely wide scalability. The spearhead in terms of computing power is the 45 watt 6-core module with 2.8 GHz Intel® Xeon® E-2276ME processor. It provides the highest embedded computing performance with integrated high-performance processor graphics currently available worldwide, while the 2.4 GHz Intel® Celeron™ G4930E processor module with 35 watts sets the new price-performance benchmark.
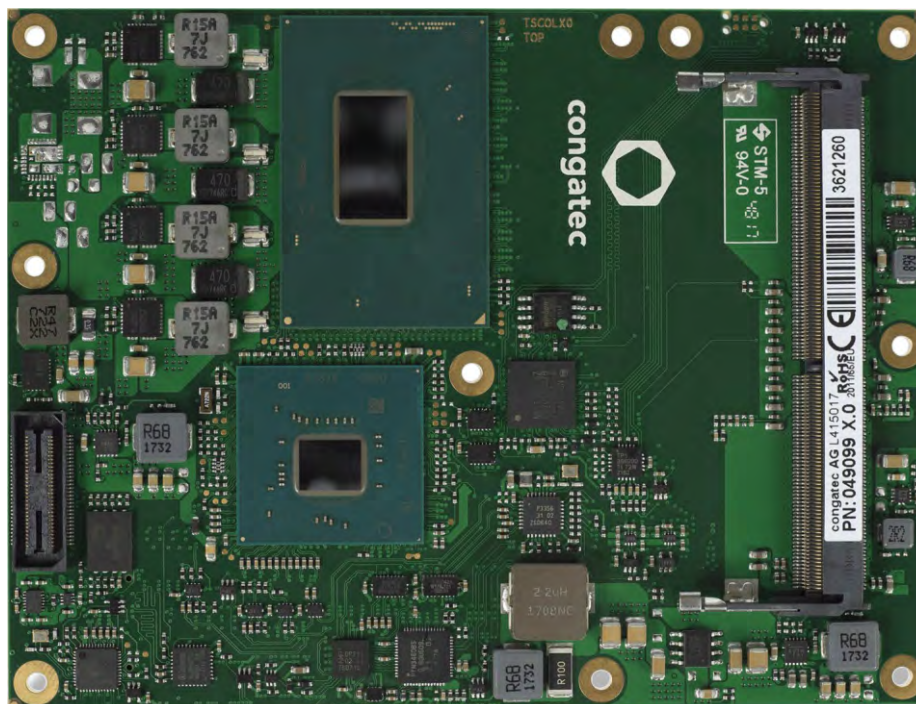
Particularly noteworthy are the two 6-core congatec modules with a TDP of 25 watts offered on Intel® Xeon® E-2276ML and Intel® Core™ i7-9850HL processors. They enable developers to create completely passively cooledembedded edge computing systems that can run up to 12 standalone virtual machines in parallel thanks to hyperthreading. This allows operation even in fully sealed systems, under the harshest environmental conditions and with the highest IP protection. The same applies to the two quad-core modules with Intel® Xeon® E-2254ML or Intel® Core™ i3-9100HL processor as well as the Intel® Celeron® G4932E processor-based module, all featuring a – partly configurable – TDP of 25 watts.

"In the embedded edge computing segment, our OEM customers are now using such multicore platforms to consolidate several formerly separate systems on a single embedded edge computer. Hypervisor technology allows them to operate up to 12 virtual machines in parallel on one system," explains Andreas Bergbauer, Product Line Manager for COM Express Modules at congatec. "These include real-time controllers (soft PLCs), Industry 4.0 gateways for tactile Internet via Time Synchronized Networking, IoT gateways for sending big data towards the cloud and central management systems, as well as vision systems, artificial intelligence (AI) and deep learning applications. In addition, there are software-defined networking functions such as intrusion prevention and detection systems that analyze data traffic parallel to the applications, thereby avoiding latencies that would arise with serial operation of analytics and applications."

Other applications besides embedded edge computing include, of course, classic high-end medical imaging systems and HMIs as well as high-end gaming, infotainment and digital signage systems that require best-in-class computing power and throughput on a single die in tandem with the Intel® graphics

conga-TS370 COM Express Type 6 Computer-on-Modules can now be ordered in 14 standard configurations:
https://www.congatec.com/en/products/com-express-type-6/conga-ts370.html

Boeing's 737 Max Software Outsourced to $9-an-Hour Engineers

By: Peter Robison -- June 28, 2019, 10:46 PM GMT+2
Source: https://www.bloomberg.com/news/articles/2019-06-28/boeing-s-737-max-software-outsourced-to-9-an-hour-engineers

Planemaker and suppliers used lower-paid temporary workers
Engineers feared the practice meant code wasn't done right

It remains the mystery at the heart of Boeing Co.'s 737 Max crisis: how a company renowned for meticulous design made seemingly basic software mistakes leading to a pair of deadly crashes. Longtime Boeing engineers say the effort was complicated by a push to outsource work to lower-paid contractors.

The Max software -- plagued by issues that could keep the planes grounded months longer after U.S. regulators this week revealed a new flaw -- was developed at a time Boeing was laying off experienced engineers and pressing suppliers to cut costs.

Increasingly, the iconic American planemaker and its subcontractors have relied on temporary workers making as little as $9 an hour to develop and test software, often from countries lacking a deep background in aerospace -- notably India.

The cockpit of a grounded 737 Max 8 aircraft.
Photographer: Dimas Ardian/Bloomberg

Boeing 737 Max prepares for take off during testing in 2016.
Photographer: Mike Kane/Bloomberg

Related: Pilots Flagged Software Problems on Boeing Jets Besides Max

In offices across from Seattle's Boeing Field, recent college graduates employed by the Indian software developer HCL Technologies Ltd. occupied several rows of desks, said Mark Rabin, a former Boeing software engineer who worked in a flight-test group that supported the Max.

The coders from HCL were typically designing to specifications set by Boeing. Still, "it was controversial because it was far less efficient than Boeing engineers just writing the code," Rabin said. Frequently, he recalled, "it took many rounds going back and forth because the code was not done correctly."

Boeing's cultivation of Indian companies appeared to pay other dividends. In recent years, it has won several orders for Indian military and commercial aircraft, such as a $22 billion one in January 2017 to supply SpiceJet Ltd. That order included 100 737-Max 8 jets and represented Boeing's largest order ever from an Indian airline, a coup in a country dominated by Airbus.

Based on resumes posted on social media, HCL engineers helped develop and test the Max's flight-display software, while employees from another Indian company, Cyient Ltd., handled software for flight-test equipment.

Costly Delay

In one post, an HCL employee summarized his duties with a reference to the now-infamous model, which started flight tests in January 2016: "Provided quick workaround to resolve production issue which resulted in not delaying flight test of 737-Max (delay in each flight test will cost very big amount for Boeing)."

Boeing said the company did not rely on engineers from HCL and Cyient for the Maneuvering Characteristics Augmentation System, which has been linked to the Lion Air crash last October and the Ethiopian Airlines disaster in March. The Chicago-based planemaker also said it didn't rely on either firm for another software issue disclosed after the crashes: a cockpit warning light that wasn't working for most buyers.

"Boeing has many decades of experience working with supplier/partners around the world," a company spokesman said. "Our primary focus is on always ensuring that our products and services are safe, of the highest quality and comply with all applicable regulations."

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# Boeing's 737 Max Software Outsourced to $9-an-Hour Engineers

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In a statement, HCL said it "has a strong and long-standing business relationship with The Boeing Company, and we take pride in the work we do for all our customers. However, HCL does not comment on specific work we do for our customers. HCL is not associated with any ongoing issues with 737 Max."

Recent simulator tests by the Federal Aviation Administration suggest the software issues on Boeing's best-selling model run deeper. The company's shares fell this week after the regulator found a further problem with a computer chip that experienced a lag in emergency response when it was overwhelmed with data.

Engineers who worked on the Max, which Boeing began developing eight years ago to match a rival Airbus SE plane, have complained of pressure from managers to limit changes that might introduce extra time or cost.
"Boeing was doing all kinds of things, everything you can imagine, to reduce cost, including moving work from Puget Sound, because we'd become very expensive here," said Rick Ludtke, a former Boeing flight controls engineer laid off in 2017. "All that's very understandable if you think of it from a business perspective. Slowly over time it appears that's eroded the ability for Puget Sound designers to design."

Rabin, the former software engineer, recalled one manager saying at an all-hands meeting that Boeing didn't need senior engineers because its products were mature. "I was shocked that in a room full of a couple hundred mostly senior engineers we were being told that we weren't needed," said Rabin, who was laid off in 2015.
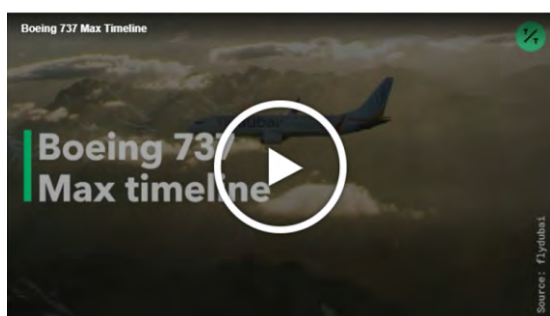
Boeing could take three more months
to fix the latest software glitch on the 737 Max,
its best-selling model. (Source: TicToc)

View the video: CLICK HERE

The typical jetliner has millions of parts -- and millions of lines of code -- and Boeing has long turned over large portions of the work to suppliers who follow its detailed design blueprints.

Starting with the 787 Dreamliner, launched in 2004, it sought to increase profits by instead providing high-level specifications and then asking suppliers to design more parts themselves. The thinking was "they're the experts, you see, and they will take care of all of this stuff for us," said Frank McCormick, a former Boeing flight-controls software engineer who later worked as a consultant to regulators and manufacturers. "This was just nonsense."

Sales are another reason to send the work overseas. In exchange for an $11 billion order in 2005 from Air India, Boeing promised to invest $1.7 billion in Indian companies. That was a boon for HCL and other software developers from India, such as Cyient, whose engineers were widely used in computer-services industries but not yet prominent in aerospace.

Rockwell Collins, which makes cockpit electronics, had been among the first aerospace companies to source significant work in India in 2000, when HCL began testing software there for the Cedar Rapids, Iowa-based company. By 2010, HCL employed more than 400 people at design, development and verification centers for Rockwell Collins in Chennai and Bangalore.

That same year, Boeing opened what it called a "center of excellence" with HCL in Chennai, saying the companies would partner "to create software critical for flight test." In 2011, Boeing named Cyient, then known as Infotech, to a list of its "suppliers of the year" for design, stress analysis and software engineering on the 787 and the 747-8 at another center in Hyderabad.

The Boeing rival also relies in part on offshore engineers. In addition to supporting sales, the planemakers say global design teams add efficiency as they work around the clock. But outsourcing has long been a sore point for some Boeing engineers, who, in addition to fearing job losses say it has led to communications issues and mistakes.

Moscow Mistakes

Boeing has also expanded a design center in Moscow. At a meeting with a chief 787 engineer in 2008, one staffer complained about sending drawings back to a team in Russia 18 times before they understood that the smoke detectors needed to be connected to the electrical system, said Cynthia Cole, a former Boeing engineer who headed the engineers' union from 2006 to 2010.

"Engineering started becoming a commodity," said Vance Hilderman, who co-founded a company called TekSci that supplied aerospace contract engineers and began losing work to overseas competitors in the early 2000s.

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Boeing's 737 Max Software Outsourced to $9-an-Hour Engineers

U.S.-based avionics companies in particular moved aggressively, shifting more than 30% of their software engineering offshore versus 10% for European-based firms in recent years, said Hilderman, an avionics safety consultant with three decades of experience whose recent clients include most of the major Boeing suppliers.

With a strong dollar, a big part of the attraction was price. Engineers in India made around $5 an hour; it's now $9 or $10, compared with $35 to $40 for those in the U.S. on an H1B visa, he said. But he'd tell clients the cheaper hourly wage equated to more like $80 because of the need for supervision, and he said his firm won back some business to fix mistakes.

HCL, once known as Hindustan Computers, was founded in 1976 by billionaire Shiv Nadar and now has more than $8.6 billion in annual sales. With 18,000 employees in the U.S. and 15,000 in Europe, HCL is a global company and has deep expertise in computing, said Sukamal Banerjee, a vice president. It has won business from Boeing on that basis, not on price, he said: "We came from a strong R&D background."

Still, for the 787, HCL gave Boeing a remarkable price – free, according to Sam Swaro, an associate vice president who pitched HCL's services at a San Diego conference sponsored by Avionics International magazine in June. He said the company took no up-front payments on the 787 and only started collecting payments based on sales years later, an "innovative business model" he offered to extend to others in the industry.

The 787 entered service three years late and billions of dollars over budget in 2011, in part because of confusion introduced by the outsourcing strategy. Under Dennis Muilenburg, a longtime Boeing engineer who became chief executive in 2015, the company has said that it planned to bring more work back in-house for its newest planes.

Engineer Backwater

The Max became Boeing's top seller soon after it was offered in 2011. But for ambitious engineers, it was something of a "backwater," said Peter Lemme, who designed the 767's automated flight controls and is now a consultant. The Max was an update of a 50-year-old design, and the changes needed to be limited enough that Boeing could produce the new planes like cookie cutters, with few changes for either the assembly line or airlines. "As an engineer that's not the greatest job," he said.

Rockwell Collins, now a unit of United Technologies Corp., won the Max contract for cockpit displays, and it has relied in part on HCL engineers in India, Iowa and the Seattle area. A United Technologies spokeswoman didn't respond to a request for comment.

Boeing 737 Max airplanes at the company's manufacturing facility in Renton, Washington. Photographer: David Ryder/Bloomberg

Contract engineers from Cyient helped test flight test equipment. Charles LoveJoy, a former flight-test instrumentation design engineer at the company, said engineers in the U.S. would review drawings done overnight in India every morning at 7:30 a.m. "We did have our challenges with the India team," he said. "They met the requirements, per se, but you could do it better."

Multiple investigations – including a Justice Department criminal probe – are trying to unravel how and when critical decisions were made about the Max's software. During the crashes of Lion Air and Ethiopian Airlines planes that killed 346 people, investigators suspect, the MCAS system pushed the planes into uncontrollable dives because of bad data from a single sensor.

That design violated basic principles of redundancy for generations of Boeing engineers, and the company apparently never tested to see how the software would respond, Lemme said. "It was a stunning fail," he said. "A lot of people should have thought of this problem – not one person – and asked about it."

Boeing also has disclosed that it learned soon after Max deliveries began in 2017 that a warning light that might have alerted crews to the issue with the sensor wasn't installed correctly in the flight-display software. A Boeing statement in May, explaining why the company didn't inform regulators at the time, said engineers had determined it wasn't a safety issue. "Senior company leadership," the statement added, "was not involved in the review."   _ End

Air Force to deploy ground-based lasers in first field test of 'directed energy' weapon

By: Aaron Gregg | The Washington Post 03-Aug-2019 | Link: http://a.msn.com/01/en-us/AAFfwmb?ocid=se

The Air Force announced Friday it will soon deploy two ground-based laser weapons to an undisclosed location to test how they can be used against small drones, the service's first "operational field test" of an experimental "directed energy" weapon.

© Mario Tama/Getty Images The U.S. Air Force said Friday it plans the first operational field test of laser weapons, which are part of a $23 million Raytheon contract. The test, to be conducted in an undisclosed location outside the continental United States, will focus on how the weapons perform against small drones. (Mario Tama/Getty Images)

On Friday afternoon, the Air Force announced a $23 million sole-source contract for two of Raytheon's High Energy Laser Weapons Systems, through which the systems are to be tested for 12 months in an undisclosed "contested environment" outside the continental United States.

"What we really want to do is figure out how we can deploy these systems in an environment where our warfighters work and train every day," said Evan Hunt, director of high energy laser and counter-UAS at Raytheon. (UAS stands for unmanned aerial system.)

The 10-kilowatt lasers are to be mounted on small ground-based vehicles and aimed using an interface similar to a video game controller. The prototype laser weapons were built by Raytheon and incorporate a range of components from the commercial technology industry, including high-performance lithium-ion batteries, the same type used in electric vehicles.

Because laser weapons could fire constantly without wasting ammunition, military technology experts have theorized they could one day be useful in combating the small, remotely operated quadcopter drones that ISIS has used. They are also expected to be an effective counter against swarming attack drones, a concept that a handful of countries are exploring.

"The fact that it's a laser weapon allows you to put energy in target at the speed of light. It can be an instantaneous heating event," said Michael Jirjis, who leads the Air Force's directed energy experimentation projects.

Jirjis later said in an email that the test will be the first "operational field assessment" of a laser weapon.

He said the effort is the first Air Force deployment "for an operational field assessment of lasers for counter UAS and the first time we have the entire AF Enterprise intimately engaged across the acquisition community, test centers, operators, and headquarters."

Tension between South Korea and Japan could hurt US goals in the Pacific — and China is watching

By: Aaron Mehta
August 15 at 11:38 AM

South Korean protesters burn portraits of Japanese Prime Minister Shinzo Abe on May 23, 2013, in Seoul, South Korea. (Chung Sung-Jun/Getty Images)

SOURCE: Defense News

WASHINGTON — The tweet came Aug. 2, following an emergency meeting of the South Korean government. It was a photo of President Moon Jae-in, sent out from the government's official Twitter feed, with text plastered over it and a succinct message: **"We will never again lose to Japan."**

In what the U.S. has declared to be an era of great power competition, part of the plan to blunt Chinese influence in the region comes from relying on Japan and South Korea, two key American partners, to focus on shared threats in the region. But since October, new rifts have formed in the Japan-South Korea relationship, with the two countries in the last few weeks trading major economic blows and neither side dialing down the rhetoric.

Now, there are concerns that what have been social and economic tensions could boil over and destroy a key intelligence sharing arrangement, one the U.S. had hoped to use as a platform for building greater defense coop between the two neighbors. Should that happen, it may impact America's long-term strategy in the region.

"This isn't Japan and Korea going to war," said Patrick Cronin, a regional expert with the Hudson Institute. "But it is a worse situation than we should be allowing right now, and it's dangerous if it spills over into things like severing the intelligence sharing arrangement. It's dangerous for all three countries."

"You have literally the foundation of America's Indo-Pacific strategy being called into question at a time when it's vital for the United States to be showing this strategy" can work, Cronin added. "We've had ups and down. But I don't want to sugarcoat the fact that this deterioration of the relationship we've witnessed since October 2018 is fundamentally against U.S. national interests."

Economic tensions hit military

The latest round of problems between the two countries started in October, when a South Korean court ruled that Japanese company Nippon Steel could be held liable for the use of slave labor when Japan occupied South Korea before and during World War II. Japan has argued that the 1965 agreement that reopened relations between Seoul and Tokyo covered any questions of reparations.

Since that ruling, a series of small military incidents have inflamed the historic bilateral tensions, with cultural tensions boiling over into economic disputes in July when Japan blocked the transfer of key materials used in semiconductors and flat screens — major exports for South Korea — claiming Seoul was not preventing those key technologies from ending up in North Korea.

Then on Aug. 1, Japan removed Seoul from its "white list," the first time a country has been removed from Tokyo's list of trade partners with minimum export regulations. Two weeks later, South Korea returned fire by announcing it would remove Japan from its own white list.

The damage caused by this mini trade war could prove dangerous for the global economy, but national security experts are also nervously eyeing a statement from South Korean officials that it might next tear up a key intelligence sharing agreement known as the General Security of Military Information Agreement, or **GSOMIA**.
Signed in 2016 following years of diplomatic efforts by the United States, GSOMIA is an agreement between Tokyo and Seoul to share information about North Korea. Under the deal, Japan provides satellite imagery and electronic information among other intel to South Korea, which in turn provides human intelligence to Japan for analysis.

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