HAECO Group

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HAECO



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HAECO Group Services

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HAECO completes Flat-bed Seat/AVOD installation prototype for United Airlines

In November, HAECO completed the installation of Flat-bed Seat and Audio Video On Demand (AVOD) on a United Airlines' Boeing 767-400 aircraft. The aircraft is the prototype for a major refurbishment programme that will see Flat-bed Seat and AVOD installed on 12 of the airline's Boeing 767-400 aircraft.

This is another milestone in the well-established United-HAECO partnership, following on from the recent completion of Flat-bed seat and AVOD installation on United's subsidiary, Continental Airlines' Boeing 777-200 fleet.

A successful test flight on 17 November marked completion of work on the prototype aircraft and Mr. Roger Brown, United Airline's Managing Director Airframe Vendor Management, complimented the HAECO team on delivering outstanding quality, saying: 'I wanted to thank the HAECO team for their dedication and professionalism through the programme. Once again, the HAECO team has produced an outstanding product for our customers.'

Airframe Maintenance +



HAECO completes C-Checks on Atlas Air's first Boeing 747-400 passenger aircraft

In October and November, HAECO completed C4-Checks on two Atlas Air Boeing 747–400 passenger aircraft. The two aircraft, which are now providing charter services to the US Government, mark the formerly all-cargo airline's first entry into the passenger market using its own aircraft.

Following on from the completion of a D-Check and cabin reconfiguration programme on two SonAir Boeing 747–400 passenger aircraft operated by Atlas Air in 2010, this project is a new step in the growing relationship between Atlas Air and HAECO.

Airframe Maintenance +



HAECO launches Finnair's new livery

On 24 October, HAECO completed a C-Check and repainting on one of Finnair's long-haul A340s. The aircraft is the first to be painted in Finnair's new livery, which is part of a major re-branding programme for the airline. The new look includes changes to the company's logo, aircraft livery and cabin interior, as well as to uniforms and service style. The new logo is an updated version of the current one, preserving the blue and white colour scheme, but with a different logotype for the Finnair name and "F" symbol, giving a more dynamic and modern look.



TAECO welcomes first ANA Boeing 777

On 15 July, Taikoo (Xiamen) Aircraft Engineering Co. Ltd. (TAECO) received its first All Nippon Airways (ANA) Boeing 777 aircraft for heavy airframe maintenance. This input ushered in a new era of cooperation between ANA and TAECO.

The relationship began back in November 1997, when the first ANA Boeing 747-400 was delivered to TAECO for maintenance; since then, TAECO has provided airframe maintenance services for the airline's Boeing 737, 767 and now 777 aircraft. As always, the TAECO team's commitment to high-quality service and on-time redelivery, ensures total satisfaction for its customers.

Airframe Maintenance 🔶



Virgin Atlantic selects HAECO and NAT for B747-400 cabin reconfiguration work

Virgin Atlantic Airways has entered into agreements with Northwest Aerospace Technologies, Inc. (NAT) and HAECO to provide cabin reconfiguration services for the airline's Gatwick-based fleet of Boeing 747-400 aircraft.

The modifications will reconfigure Virgin Atlantics' Boeing 747-400 fleet with new and upgraded passenger seating, a new inflight entertainment system with connectivity, new monuments, interior furnishing and décor enhancements.

The work scope undertaken by HAECO includes aircraft modification project management, material management, on-site coordination with cabin and inflight entertainment vendors, cabin reconfiguration, and associated systems testing.

HAECO is proud to be selected by Virgin Atlantic to carry out its cabin reconfiguration programme. The company secured the business on the back of its strong track record in service quality, reliability, and engineering capabilities and having worked closely together with the cabin integrator NAT on past cabin projects, delivering excellent results for end customers. HAECO completed over 200 cabin reconfiguration inputs in the last three years, HAECO has full confidence in delivering a very successful cabin programme for Virgin Atlantic. **F**



HAECO supports ANA's Boeing 787 Dreamliner inaugural flight

On 27 October, Hong Kong International Airport (HKIA) welcomed ANA's inaugural Boeing 787 Dreamliner flight – a special charter flight from Narita International Airport in Japan to Hong Kong. HAECO was honoured to be a part of this historic event, as MRO service provider to the aircraft, providing technical assistance, ramp equipment and cabin services. **F**

Cathay Pacific, HAECO and HAESL complete Rolls-Royce Trent 700 fan blade C-scan programme



In the second quarter this year, Cathay Pacific Airways initiated a programme to carry out C-scan testing on the fan blades on its fleet of Rolls-Royce Trent 700 engines. To achieve this for the airline, HAECO's Line Maintenance Mini Base (LMMB) launched a roll-over programme that involved replacing the full set of fan blades on each engine and then sending the old blades to Hong Kong Aero Engine Services Limited (HAESL) for ultrasonic inspection (C-scan); after being declared serviceable, the blades were returned to HAECO to be fitted on another engine. The HAECO team then carried out a Fan Trim Balance test on each engine.

The programme involved thorough planning, coordination and commitment from Cathay Pacific, HAECO and HAESL. A dedicated team was formed to carry out the task. With the use of a specially designed and built fan blade lubrication and preparation trolley, they changed 2,500 fan blades on approximately 100 engines in 18 weeks with zero Lost Time Incidents. On 14 October, the HAECO teams completed the task, seven weeks ahead of schedule - a value-adding achievement that earned high praise from customer Cathay Pacific. **F**



HAECO extends scope of service for Air France

HAECO has extended the range of services that it provides to Air France. Since July, the company has been providing three-times-a-week, nose-to-tail A-Checks, in addition to exterior washing on the airline's Boeing 777-200, 777-300 and 747-400ER fleet in Hong Kong. As at 26 October, HAECO had completed 26 inputs for Air France.



HAECO accomplishes 100th United Airlines Boeing 777 A-Check input

On 6 August, HAECO completed the 100th A-Check on United Airlines' Boeing 777 fleet. In 2010, HAECO took a significant step forward in strengthening its business partnership with United, when it extended the scope of services that it provides to the airline from Line Maintenance transit checks and service checks to A-Checks on its Boeing 777 aircraft.



HAECO receives praise from ANA

On 6 July, an All Nippon Airways (ANA) Boeing 767 Freighter arrived at Hong Kong with a defective hydraulic pump in its left engine. During inspection, HAECO engineers discovered that there were burn marks on electrical feeder cables located in the pylon area. The aircraft was grounded and a fuse pin replacement sourced and fitted.

To facilitate handling of this ad hoc incident, HAECO's Line Maintenance Transit team coordinated with the Line Maintenance Cargo team and HAECO's Airframe Maintenance team liaised with the ANA Station Maintenance Manager and ANA headquarters for manpower allocation and hangar arrangements.

During a visit to Hong Kong on 25 July, Mr. Hitoshi Maruyama, ANA's Deputy General Manager, Line Maintenance Center, presented a Certificate of Appreciation to the HAECO Line Maintenance team for their professional defect rectification work and excellent maintenance performance.



TAECO provides Line Maintenance to Cargolux Boeing 747-8 Freighter

In late November, Cargolux Airlines International, one of TAECO's Line Maintenance customers, began operating a twice-weekly flight to Shanghai Pudong International Airport, using a Boeing 747-8 Freighter. TAECO's engineers have undergone approved certification training in order to provide maintenance services on this new aircraft type and TAECO is one of the first service providers handling Boeing 747-8 Freighters in Mainland China.

TAECO earns high praise from American Airlines

On 2 November, an American Airlines aircraft was declared AOG in Beijing. Within an hour, TAECO had mobilised a Line Maintenance team, identified the problem, collected replacement parts from the customer, completed customs formalities, and fixed the defect. As a result, the next flight departed on schedule and the TAECO team received a big thank-you from American Airlines for their swift response and professional service.

Cabin Reconfiguration +



Boeing appoints TAECO as Boeing Business Jets Completion Centre

In October, during the annual conference of the National Business Aviation Association, held in Las Vegas, The Boeing Company announced the appointment of TAECO as a Boeing Business Jets VIP Completion Centre. This status allows TAECO to undertake completion of "green" Boeing Business Jet (BBJ) aircraft interiors at its facility in Xiamen. The Boeing license also gives TAECO access to technical information and drawings to assist with completion work. At present, TAECO holds approvals from both Boeing and Airbus to undertake completion of their aircraft and this announcement has further enhanced TAECO's credibility in the cabin completion sector.

The TAECO Completion Centre holds HKAR-21 design organisation approval from the Hong Kong Civil Aviation Department (HKCAD), as well as its Civil Aviation Administration of China (CAAC) equivalent, DMDOR certification. Additionally, the European Aviation Safety Agency (EASA) and HKCAD have a working arrangement by which EASA validates STCs issued by the HKCAD - giving TAECO access to the European market.

TAECO's long-term goal is to be a leading completion centre for green VIP aircraft. In addition to the private and corporate jet sphere, the centre is developing capabilities in design, engineering and integration for commercial aircraft cabin reconfiguration. TAECO's broad customer base will stand it in good stead in its efforts to emerge as a leading player in this market.

Engine Overhaul +



HAESL Phase V Component Repair Facility becomes fully operational

Following its official opening on 15 June, HAESL's Phase V Component Repair Centre of Excellence (CoE) has been progressively transformed into a fully operational facility.

Starting last February, machinery and equipment have been gradually relocated from the existing Phase II Component Repair workshop and to date, 75% of the machinery has been relocated, installed and commissioned, while the remaining 25% of the transfer programme will be completed by the end of this year. New machinery has also been delivered and commissioned. The facility has obtained approvals to operate component repair cells and their respective machinery. This ongoing process will complete in 2013 – when the last of the newly-purchased machinery will be delivered.

Following on from the Phase V relocation, the Phase II Component Repair workshop will undergo a major reconfiguration in the second quarter of 2012, allowing for future business expansion and enabling the facility to deliver world-class repair services.

HAESL now operates four component repair cells at "Gold" standard under the Rolls-Royce Centre of Excellence accreditation scheme – out of a total of ten at this level worldwide. Two more cells are undergoing the accreditation process. Recently, five additional HAESL component repair cells in Phases II and V have been admitted to the scheme, following a refresher process initiated by Rolls-Royce.

Engine Overhaul +



TEXL completes first GE90-115B performance restoration

In November, Taikoo Engine Services (Xiamen) Co. Ltd (TEXL) marked a significant milestone by completing its first Performance Restoration on a GE90-115B engine for customer EVA Airways. TEXL is currently working on its second GE90-115B Performance Restoration on an engine input by Emirates. Since the first engine input in mid-2010, TEXL has overhauled a total of 32 engines from operators that include Cathay Pacific Airways, Emirates, EVA Airways, China Southern Airlines, Jet Airways, Thai Airways, Turkish Airlines and Air India. TEXL is continuing to extend its GE90-110/115B engine overhaul capability in response to market demands and to meet its customers' maintenance requirements. The company will obtain full capability for the HPC Module and quick-turn capability for the LPT Module before the end of the year. TEXL will progressively attain full capability on the LPT module, gearboxes, bearings, fan module and fan case during 2012.

Inventory Technical Management +

HAECO signs ITM service contract with Cathay Pacific

In November, HAECO entered into an Inventory Technical Management (ITM) contract with Cathay Pacific Airways to provide ITM services for the airline's fleet of 10 new Boeing 747-8 Freighters, delivered during 2011 and 2012.

The ITM services include inventory management, reliability management, supply chain management, technical services, and comprehensive 24/7 Aircraft-on-Ground (AOG) support, covering Boeing 747-8F-specific components for Cathay Pacific's Hong Kong base and its line station network.

With the efficiencies resulting from pooling inventory resources and HAECO's technical capabilities, the company is well positioned to capture additional business opportunities in the future.





B/E Aerospace air chillers programme

To cater to the Total Care Air Chillers Programme implemented by Cathay Pacific Airways in partnership with B/E Aerospace, HAECO's Component and Avionics Overhaul (CAO) unit has completely reorganised the B/E Air Chillers repair and overhaul section at its

facility at Tseung Kwan O. HAECO acquired the latest chiller tester from B/E Anaheim, USA and the HAECO CAO team, including engineers, supervisors and technicians, completed recurrent training at B/E Aerospace in September.

The reorganisation is a business improvement initiative aimed at achieving greater throughput, a higher degree of automation in order to reduce the need for manual inspections and repairs, and a general streamlining of the work processes to reduce turnaround time.

The renovated air chillers workshop has a total area of 173 square metres and capacity of up to 600 inputs per annum. r

HAECO CAO introduces a customer web portal

HAECO CAO has designed and constructed a web portal for its customers. The portal allows customers to conduct real-time track and trace throughout the entire process of each repair order, so they can obtain status updates on their components at any stage during their time in the CAO workshop.

The web portal provides a comprehensive range of information for customers, including capability list by aircraft type, quotation approval process, estimated date of completion, inventory status, material shortages and other supporting functions.

http://portal.haeco.com F



Taikoo Spirit receives GE90-94 (Boeing 777) thrust reversers

In November, HAECO's composite joint venture with Spirit AeroSystems, Taikoo Spirit AeroSystems (Jinjiang) Composite Co. Ltd. ("Taikoo Spirit") took delivery of two GE90 (Boeing 777) thrust reversers from Spirit AeroSystems' base in Wichita, USA. The two thrust reversers will be overhauled according to the Component Maintenance Manual and all applicable Service Bulletins accomplished. On completion, they will be used to secure business in the Asia Pacific region. Taikoo Spirit offers extensive repairs on various configurations of the GE90 thrust reverser, under an umbrella of approvals.

Taikoo Spirit commences CFM56-7 blocker door overhaul programme



In November, Taikoo Spirit commenced a CFM56-7 blocker door (Boeing 737NG) overhaul programme in conjunction with Spirit AeroSystems, Wichita, USA and The Boeing Company, Australia. During the three-year programme, Taikoo Spirit will receive 18 –24 ship-sets of blocker doors for overhaul. The blocker doors will be inspected, overhauled, and finished according to each customer's defined scope of work. The average turnaround time for the overhaul of each ship-set of 20 blocker doors is 14 days. **F**

TALSCO designs customised shipping pallets



To further enhance service quality, Taikoo (Xiamen) Landing Gear Services Co. Ltd. (TALSCO) has designed customised shipping pallets for various types of landing gear. The shipping pallets enable landing gear to be packed and held securely in a compact and well-protected manner. The custom-designed pallets have a number of advantages over traditional wooden pallets, which typically require heat treatment/ fumigation when shipped to other countries. They can also be reused continuously, whilst wooden pallets have a limited lifespan. The new pallets are designed for easy packing, with legs that pivot on special hinges and space for accessories to be packed alongside the landing gear. Consolidation of equipment into the same pallet means that customers can enjoy freight savings as well as fumigation savings, while the extra protection afforded by the new pallet design ensures their landing gear and accessories will be safely delivered in good condition.



TALSCO acquires Boeing 777-200 ship-set landing gear

TALSCO has acquired a Boeing 777-200 ship set of landing gear, adding to the company's portfolio of rotable assets. The landing gear will be available to support the global Boeing 777 market on an exchange or lease programme. The Boeing 777 landing gear is the largest commercial aircraft landing gear in production and it is the backbone of TALSCO's business; as such, the facility's plating tanks, overhead gantries and so on have all been designed and sized to cater for this type of gear. This latest acquisition further strengthens TALSCO's capability in providing landing gear maintenance for large aircraft. **F**



Goodrich Asia Pacific supports Boeing 787 electric brake system

In October, Goodrich Asia Pacific Ltd. become the first service centre in Goodrich's Aircraft Wheels and Brakes division to establish full capability, with a full-authority electro-mechanical brake system to support the first Boeing 787 aircraft delivered to ANA. This is the world's first commercial application of this technology on the Boeing 787 Dreamliner.

GAP's capability covers testing of all electro-mechanical units, including Electric Brake Actuators (EBA) and Wire Bundle Assemblies (WBA), which are classed as Line Replaceable Units (LRU), as well as the Brake Assembly. In establishing capability, the company acquired various electronic test units to cater for the electronic side of the brake systems.

Goodrich is the recognised leader in electric brake technology, having launched its development efforts for more than ten years. In 1998, Goodrich successfully flew a full-authority electro-mechanical brake system on a USAF fighter aircraft – an industry first. In 2007, Goodrich became the first supplier to have a full-authority electro-mechanical brake system in production, with the introduction on a military unmanned aircraft.

Company Events +



HAECO receives HKAR-21 approval

On 3 November, HAECO celebrated a new milestone, when it received HKAR-21 Design Organisation Approval (DOA) and Production Organisation Approval (POA) from the HKCAD. HAECO is the first organisation in Hong Kong to be granted both approvals. In attaining this accreditation, HAECO is aligning itself with the international standards established by EASA (EU) and FAA (USA). Mr. Y.K. Leung JP, Deputy Director General of Civil Aviation, presented the approval certificate to HAECO's CEO, Mr. Augustus Tang. Accreditation to HKAR-21 DOA means that all design documents issued by HAECO accord with internationally recognised standards. All design requirements and procedures are clearly defined and documented in the Design Organisation Handbook and this structured and organised system will assist HAECO in offering better technical solutions to its customers.

Similarly, POA accreditation allows HAECO to manufacture and certify parts under the HKAR-21 standards. With both DOA and POA accreditation, HAECO is now the only organisation in Hong Kong that can provide one-stop-shop services for customers - from repair and modification design to manufacturing of aircraft parts.

Company Events +



Hong Kong General Chamber of Commerce members visit HAECO

On 25 October, 25 members of Hong Kong's oldest and largest business association, the Hong Kong General Chamber of Commerce (HKGCC), paid a visit to HAECO. The HKGCC has a membership of 4,000, representing Hong Kong, Mainland and multinational companies. The visitors, who are all senior managers from various corporations, met the HAECO management team and toured the facilities, before enjoying a lunch hosted by HAECO's COO, Kenny Tang; they were all extremely impressed by the state-of-the-art facilities.

Bruce Dickinson visits HAECO

On 4 November, HAECO hosted a hangar tour for Bruce Dickinson, lead singer of the UK heavy metal band Iron Maiden. Even more importantly, Bruce is an aviation enthusiast and pilots the band's Boeing 757, nicknamed "Ed Force One". Bruce, who was a guest of the Hong Kong branch of the Royal Aeronautical Society, was also keynote speaker at the J.K. Swire Lecture and Annual Dinner held on the same day.

CSR Activities

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HAECO participates in Hong Kong Aviation Flying Machine Competition

In September, HAECO took part in the Hong Kong Aviation Flying Machine Competition organised by Hong Kong Airlines. A team made up of Licensed Trainees from Class 50 and named "HX LT 50" were set the task of turning the most unlikely raw materials into a magnificent monoplane in less than a month.

Under the guidance of HAECO's engineers, the HX LT 50 team built their flying machine using bamboo, plastic sheeting, cable-ties and a plastic trash bin at HAECO's CAO facility in Tseung Kwan O. The team members then had to dismantle their plane and transport it in sections to the Tsim Sha Tsui harbour-front, where the final phase of the competition – the one-and-only flight of each team's entry – took place on 17 September.

The HAECO team reassembled their monoplane and carried out all necessary pre-flight checks.

Unfortunately, during the first takeoff attempt, a strong crosswind resulted in a damaged tail. After swift repairs, our undaunted lady pilot clambered back onboard. At its second attempt, the plane took off successfully and flew the furthest distance among all other flying machines – one of the major aims of the competition.

CSR Activities

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Xiamen children visit ANA Pokemon aircraft

In October, ANA's Xiamen branch invited a group of Xiamen primary school students to visit one of their Boeing 747 aircraft at TAECO; the aircraft which has recently been repainted featuring the popular Pokemon cartoon characters, had just completed an airframe maintenance check at TAECO. The visit gave TAECO the opportunity to extend an invitation to the children of the TAECO ANA core team members to visit the TAECO facility and to see this unique aircraft. The children were enthralled by the colourful aircraft and took plenty of photographs during their day at the facility.

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HAECO Group Capabilities

AIRCRAFT TYPE	EASA		FAA		HKCAD / CAAC	
	BASE MAINTENANCE	LINE MAINTENANCE	BASE MAINTENANCE	LINE MAINTENANCE	BASE MAINTENANCE	LINE MAINTENANCE
A300 / A310		<u>+</u> +	+	+		<u>+</u> +
A319 / A320 / A321	<u>+</u> +	★★	<u>+</u> <u>+</u>	<u>+</u> <u>+</u>	<u>+</u> + +	<u>+</u> + +
A330	<u>+</u> <u>+</u>	<u>+</u> +	+	+	<u>+</u> +	<u>+</u> +
A340	<u>+</u> +	★★			<u>+</u> +	<u>+</u> +
B737	<u>+</u> +	<u>+</u> +	<u>+ + +</u>	<u>+ + +</u>	<u>+</u> <u>+</u>	<u>+ + +</u>
B737NG	+	+	<u>+</u> <u>+</u>	<u>+</u> +	<u>+</u> +	<u>★ </u>
B747	<u>+</u> +	<u>+</u> <u>+</u>	<u>+</u> +	<u>+</u> +	<u>+</u> +	<u>+</u> +
B757	<u>+</u> <u>+</u>	★★	<u>+</u>	+	<u>+</u> +	<u>+</u> +
B767	<u>+</u> +	<u>+</u> <u>+</u>	<u>+</u> +	<u>+</u> +	<u>+</u> +	<u>+</u> +
B777	+	★★	<u>+</u>	<u>+</u> +	<u>+</u> +	<u>+</u> +
MD11	+	★†	<u>+</u>	<u>+</u> +		<u>+</u>
CL-600						<u>+</u>
CRJ-200 / 700					+	+
ERJ170						<u>+</u>

Capabilities also include Line Maintenance services for A380

+ HAECO

🛧 TAECO

Hong Kong Aircraft Engineering Co. Ltd. Taikoo (Xiamen) Aircraft Engineering Co. Ltd. + STAECO

Taikoo (Shandong) Aircraft Engineering Co. Ltd. + SCTAECO

Taikoo Sichuan Aircraft Engineering Services Co. Ltd.

The Group also has approvals on aircraft, engines and components maintenance from the other regulatory authorities across Asia, Africa, the Pacific, the Caribbean and Australia, which include Australia CASA, Bahrain CAA, Bangladesh CAAB, Bernuda DCA, Canada TC, Indonesia DGCA, Israel CAAI, Japan JCAB, Jordan CARC, Kenya CAA, Korea CASA, Macao SAR AACM, Malaysia DCA, Mongolia CAA, Nepal CAA, Pakistan CAA, Papua New Guinea CAA, People's Republic of China CAAC, Qatar CAA, Republic of China CCAA, Singapore CAAS, South Africa SACAA, Sri Lanka CAA, The Fiji Islands CAAFI, The Philippines CAAP, Thailand DCA, Vietnam CAAV, United Arab Emirates GCAA.

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HAECO Group Capabilities

Airbus MRO Network

Cabin Reconfiguration / Modification

Winglet Modification

- B737 / 757 / 767

Freighter Conversion

- B737-300 / 400
- B747-200 / 300 / 400
- B757-200

Engine Overhaul

- Rolls-Royce Engines (RB211 & Trent)
- GE90 Engines

Landing Gear Overhaul

- B737 / 747 / 757 / 767 / 777

Workshop Composite Repair

- B737NG CFM56-7 T/R
- B777 Trent 800 T/R
- GE90 T/R
- B737 / 757 Flight Control

Wheels & Brakes

Repair/Overhaul

Tyre Retreating Services

Aircraft Parts Production & Manufacturing Approved under:

- HKAR-21 POA
- Boeing BQMS
- BVQI (AS9100)
- Nadcap

Design & Engineering

Approved under:

- HKAR-1 E3 Design Organisation Approval
- HKAR-21 Design Organisation Approval
- SAR-21 Design Organisation Approval

Maintenance Training & Examination Approved under:

- HKAR-147
- CCAR-147
- EASA Part-147
- SAR-147
- Airbus MRO Maintenance Training Network
- Hong Kong Civil Aviation Department Authorised Aircraft Maintenance Licence Examination Centre

Aircraft Painting

Non Destructive Testing (NDT)

Hydrostatic Test Facility Approved by:

Approved by:

- U.S.A. - DOT

Calibration Laboratory (CALMET)

- HOKLAS accredited laboratory; Mutual Recognition Arrangement through APLAC on traceability of standards
- CNAS accredited laboratory

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