cetecom advanced

Your global testing and certification service provider

Who we are...

With almost 350 employees, **cetecom advanced** is a global leader in the testing and certification of electronic products with and without radio interfaces.

- Locations in Germany, the USA, Japan and Korea, as well as a representative office in China
- Global accreditations for the international recognition of testing and certification

Milpitas (Silicon Valley), USA

Essen, Germany
Saarbuecken, Germany

Anyang, Korea

Shanghai, China

Yokohama-shi, Japan

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Our services

Regulatory Testing

In our accredited laboratories with state-of-the-art testing systems, we test your product according to a wide range of specifications in order to guide it through the certification process and bring it to market.

- Electromagnetic compatibility (EMC) tests
- Radio tests
- Cellular tests
- Electrical safety tests
- Battery safety tests
- Environmental simulation tests
- SAR tests
- OTA tests

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Regulatory Approvals

We shed light on the international certification jungle and support you in developing a targeted strategy for market approval.

- We have an international presence and, as a recognized contact for the authorities, take on the project management for <u>market approval in over 180 countries</u>.

- With our own internal <u>certification bodies</u>, we also ensure direct market approvals in Europe, Japan, Canada and the USA.

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Specialized Services

In addition to regulatory services, we also offer a wide range of industry-specific services that round off our portfolio:

- SmartCard tests and certifications
- Approvals of emergency call systems
- Cybersecurity tests e.g. in accordance with CEN/CENELEC EN 18031-1, -2, -3 and RED Article 3.3, (d), (e) and (f)

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That's what makes us special...

Why cetecom advanced?

Our service portfolio and our technical equipment are outstanding and offer all the possibilities for efficient testing and certification of our customers' products.

What are the special features of working with cetecom advanced?

- Dedicated project management

- Technical exchange at eye level

- Internal exchange for the benefit of your project

- Contemporary solutions like CERT and TOM for a digitalized world

- Our global presence: a bridge to the world markets
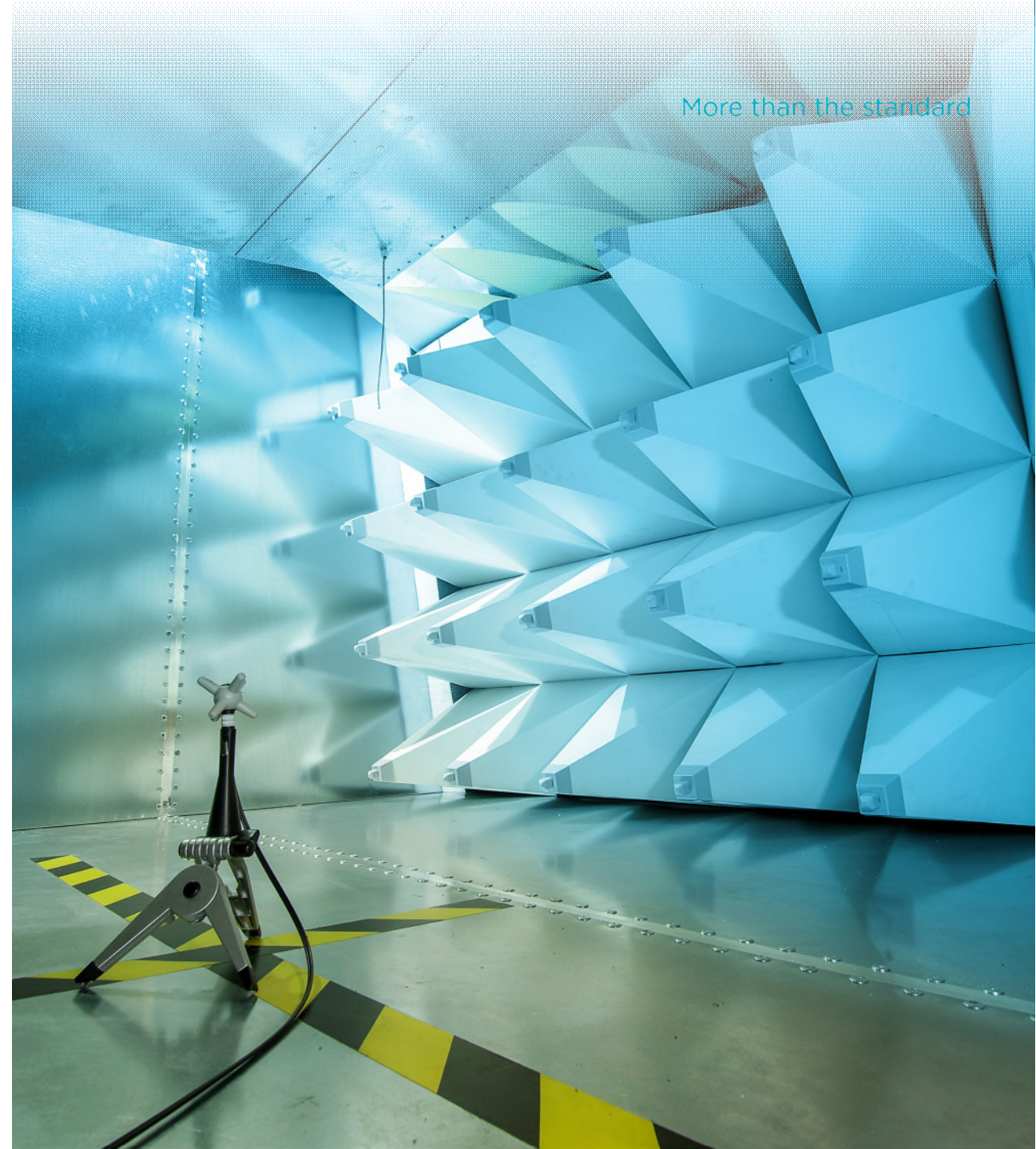
Our services in detail

EMC Testing

With our numerous accreditations and recognitions (including DAkkS, ZLG, KBA, SNCH, NSAI), we are your ideal partner for electromagnetic compatibility testing.
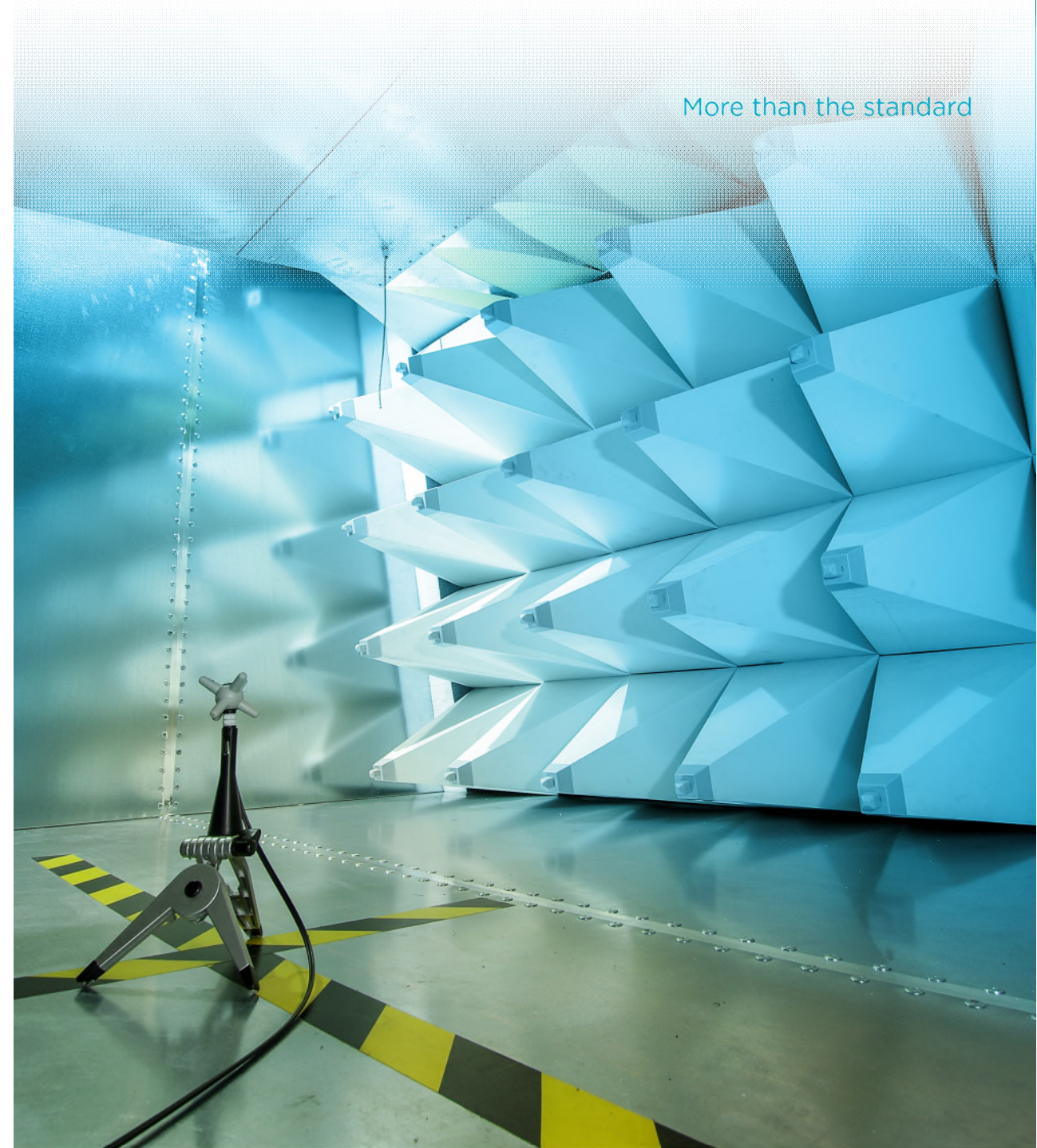
We provide you with an internationally recognized test report that documents the test results based on regulatory requirements and internationally harmonized EMC standards.

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EMC Testing

- RED / Radio Equipment Directive (2014/53/EU)
- EMC Directive (2014/30/EU)
- Machinery Directive (2006/42/EC)
- Medical devices in accordance with Regulation (EU) 2017/745
- Automotive EMC services:
  - Automotive tests according to UN ECE specifications for electronic sub-assemblies (EUBs)
  - EMC tests according to manufacturer specifications (e.g. TL81000 (VW), MBN 10284 (Mercedes Benz), GS95002 (BMW))
- Technical service of the KBA

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Radio Testing

We offer a comprehensive portfolio of regulatory radio tests, hold globally valid accreditations for testing a wide range of telecommunications products and carry out the relevant tests on the basis of currently valid norms and standards.

Our test reports are recognized worldwide and thus provide the basis for efficient market approval - whether in Europe or in other markets around the world.

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Radio Testing

These wireless technologies include:
- Bluetooth® incl. Bluetooth SIG qualification
- WLAN incl. Wi-Fi Alliance certification
- Radar
- Ultra-wideband (UWB)
- NFC
- RFID
- Wireless charging technologies incl. Qi certification

We also offer interoperability testing for combinations of wireless technologies, helping our customers to ensure the functionality of their products.

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Cellular Testing

As is the case for all products with wireless technologies, products with mobile technology also require regulatory approval for the respective countries.

Compared to other wireless technologies such as Bluetooth® and WLAN, devices with mobile technology must also meet the requirements of the network operators.

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Cellular Testing

This is another area in which we support our customers with a comprehensive test and certification portfolio for the market approval of products with cellular technologies:

- Regulatory product testing and approvals for 5G and all other mobile technologies (2G, 3G, LTE)

- Mobile testing and approvals in accordance with the specifications of international network operators, including PTCRB and GCF certification

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Electrical Safety Testing

We are familiar with the requirements for electrical safety - and are accredited by the German Accreditation Body (DAkkS), ZLG and ILAC - to carry out regulatory tests for electrical safety in accordance with the following norms and standards:

- EN/IEC 62368-1 for audio/video, information and communication technology

- EN 61010-1 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements

- AS/NZS 62368-1 and AS/NZS 60950-1 for products such as audio/video equipment and IT and communication technologies used in Australia and New Zealand

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Electrical Safety Testing

We stand out for our broad portfolio, particularly in the field of electrical testing for medical devices. We offer accredited tests for various standards.

These include, among others
- EN/IEC 60601-1 / -1-6 / -1-8 / -1-12
- EN/IEC 60601-2-66 / -2-4 / -2-18 / -2-25
- EN/IEC80601-2-30
- EN 62304

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Battery Safety Testing

We support battery and automotive manufacturers in the safety qualification of high-performance lithium-ion battery systems. The safety of lithium-ion batteries, especially for use in electric vehicles and stationary energy storage systems, is very important.

Above all, the high energy density due to the chemical elements used and the exceptionally high electrical charge must be controlled even in extreme situations in order to avoid hazards.

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Battery Safety Testing

Through comprehensive battery testing in our laboratories, we can professionally test and verify the level of battery safety required for market access. Our testing services cover the following areas:

- UN Transport Test UN 38.3
- Abuse and propagation tests
- Safety tests according to customer requirements
- Testing in accordance with ECE-R 100 / ECE-R 136
- Tests according to KBA requirements
- Safety tests on domestic and industrial storage systems

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Environmental Simulation Testing

Our environmental simulation laboratory has a large number of accreditations in accordance with DIN EN ISO/IEC 17025 and offers a range of state-of-the-art test equipment to determine the durability, long-term behavior and aging effects of a product under various simulated conditions.

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Environmental Simulation Testing

We offer a wide range of disciplines as part of these environmental simulations:
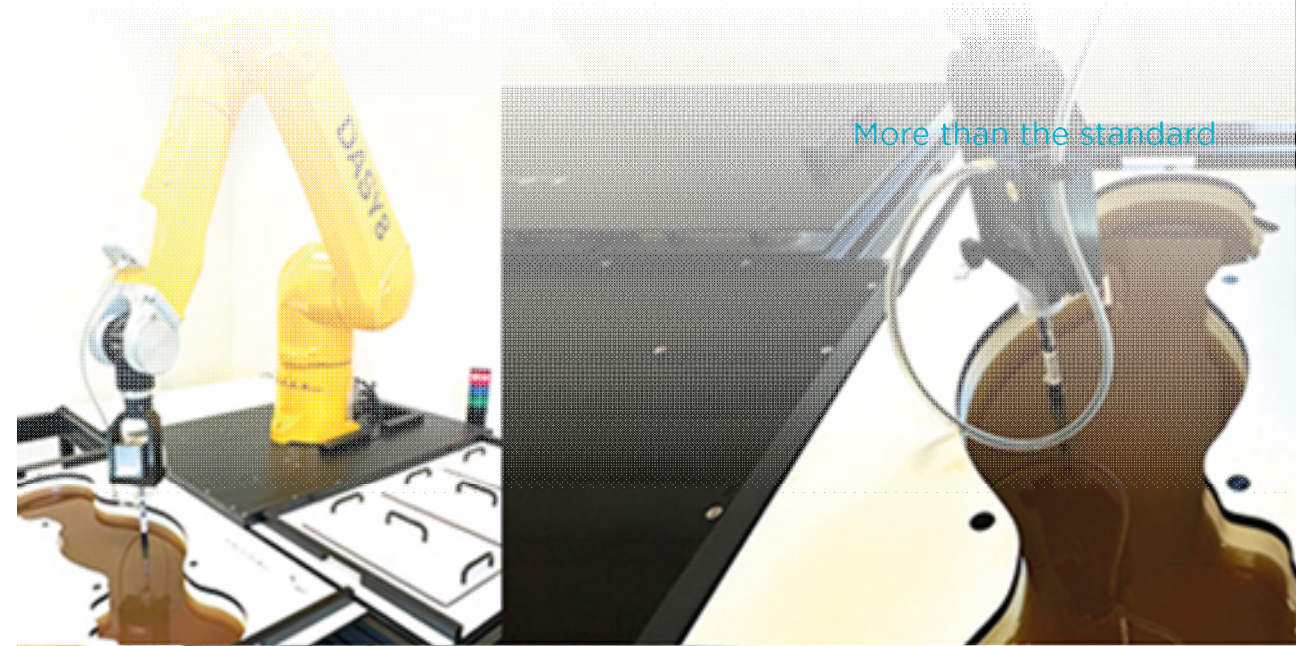
- Temperature and climate tests
- Ice water shock tests
- Mechanical vibration and shock
- Mechanical crash test bench
- Corrosion
- Altitude simulation / negative pressure tests
- IP protection class tests
  (dust and water resistance)
- Solar simulation (artificial weathering)
  Chemical resistance
- Customized environmental simulation tests

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SAR Testing

Measuring the specific absorption rate (SAR) ensures that the exposure of the human body to electromagnetic fields emitted by technical devices is within specified limits. At our facility, we carry out SAR tests in the spectrum from 10 MHz to 10 GHz.
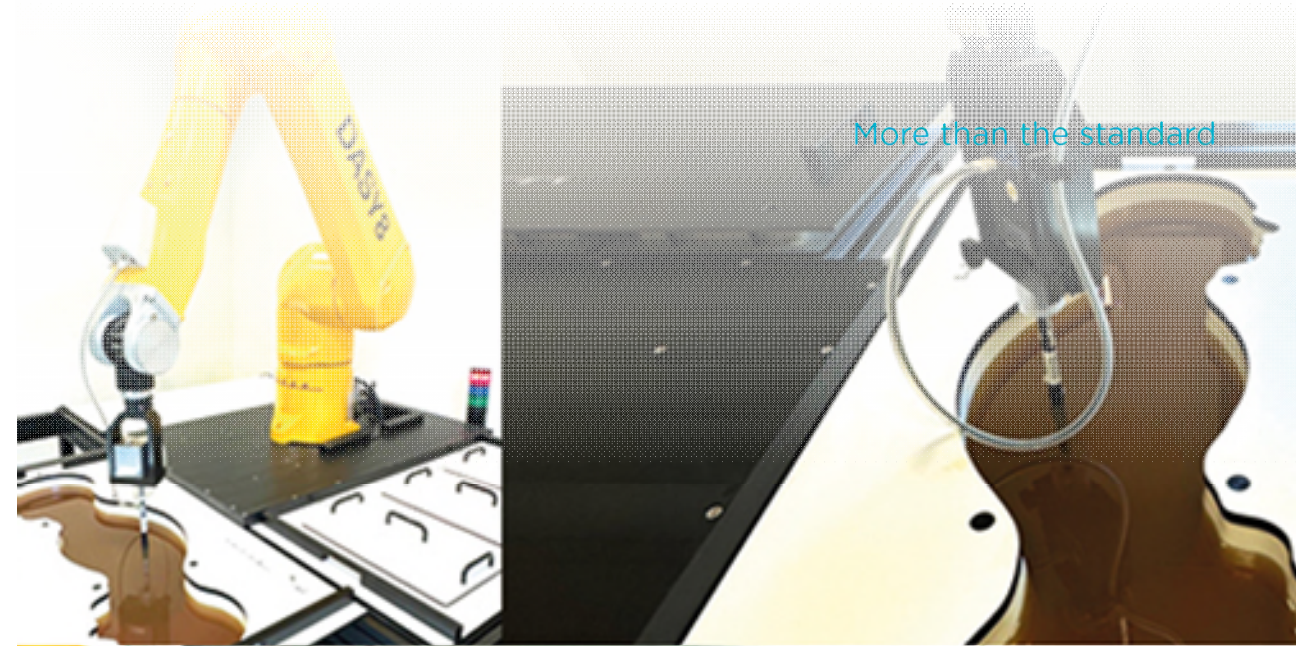
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SAR Testing

This means we cover a wide range of global requirements:

- Europe (including EN 50360, EN 50383, EN 50385, EN 50566, EN/IEC 62209-1, EN/IEC 62311, EN 62479)

- USA (including IEEE C 95.1, IEEE C 95.3, IEEE 1528), Canada (RSS-102 2015-03)

- Australia (Radio Communications Standard; Electromagnetic Radiation — Human Exposure)

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OTA Testing

As part of our over-the-air (OTA) tests, we examine and verify the performance and reliability of wireless devices and their antennas and other components.

Total Radiated Power (TRP) and Total Isotropic Sensitivity (TIS) measurements, which are carried out under the product's operating conditions, validate the compliance of the products with specified standards.

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OTA Testing

We use state-of-the-art OTA testing facilities in our laboratories. Our capacities and flexibility allow us to serve you faster and minimize your testing times.

We offer OTA testing for a wide range of products. These include, among others:

- Smartphones
- Consumer electronics products
- Network devices
- Medical technology products
- Telematics systems for the automotive and aviation sectors

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International Approvals

Automotive components, industrial technology, medical products, consumer electronics - wireless technologies are used everywhere to process information. Anyone who sells their products globally and wants to implement wireless components must observe various country-specific requirements with regard to certification and homologation for international market approval. With cetecom advanced, you know what is important and correct.

International Approvals

Let cetecom advanced simplify and execute the compliance process to ensure the timely launch of your products in the target markets. According to your specific requirements, we act as an intermediary between manufacturers and local authorities in over 180 target countries, helping you to reduce approval time and save costs.

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International Approvals

Our all-round carefree package for your certification includes, among other things

- Country and market-specific analysis of regulatory requirements
- Compliance evaluations
- Translations
- Approval planning and management
- Preparation and submission of test and approval applications
- Local technical support and guidance for on-site testing required in some countries

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International Approvals

In addition, our own internal certification bodies in Germany ensure direct market approval in Europe, Japan, Canada and the USA.

- Notified Body (NB) RED & EMC for Europe

- Telecommunication Certification Body (TCB) for the US

- Foreign Certification Body (FCB) for Canada

- Registered Certification Body (RCB) for Japan

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Notified Body RED & EMC

As a Notified Body for RED and EMC, we can support you in the CE marking process and help you gain access to the European market.

- Although a self-declaration procedure is permitted, some products require an independent conformity assessment by the Notified Body.
- If harmonized standards are deviated from or do not exist, a Notified Body must be involved.

Telecommunication Certification Body

We are accredited and recognized by the FCC as an official laboratory; we can therefore carry out all the relevant regulatory tests required to start the approval process. In addition to the relevant tests, our TCBs can also offer you the certification process and thus a complete FCC approval for the American market from a single source.

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Telecommunication Certification Body

Our internal TCBs are accredited and recognized for the following ranges:

- Range A1 - A4: Non-licensed radio frequency devices
    - e.g. Bluetooth®, WLAN, SRD

- Range B1 - B4: Licensed radio equipment
    - e.g. GSM 1900, GSM 850, 3G/UTMS, LTE, 5G, Booster

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Foreign Certification Body

As an ISO 17025 accredited and ISED recognized laboratory, we perform measurements for ISED certification in our laboratories.

Our Foreign Certification Body takes care of the certification process and the final coordination with the authorities. We therefore handle the entire testing and certification process for you, ensuring an efficient approval process and rapid approval for the **Canadian market**.

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Foreign Certification Body

Our internal FCBs are accredited and recognized for the following areas:

- Radio Scopes 1 – Licence-exempt Radio Frequency Devices

- Radio Scope 2 – Licensed Personal Mobile Radio Services

- Radio Scope 3 – Licensed General Mobile and Fixed Radio Services

- Radio Scope 4 – Licensed Maritime and Aviation Radio Services

- Radio Scope 5 – Licensed Fixed Microwave Radio Services

- Radio Scope 6 – Hearing Aid Compatibility and Volume Control

- Broadcasting – All Broadcasting Equipment Technical Standards (BETS) in the Category I Equipment Standards List

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Registered Certification Body

We offer our customers all services for an approval in **Japan**. We can carry out all the tests required for MIC approval in our ISO 17025 accredited laboratories or in our partner network.

We can handle the entire testing and certification process for you, ensuring an efficient approval process and fast approval for the Japanese market with all services from a single source.

This also includes approval via our officially recognized Registered Certification Body (RCB).

Registered Certification Body

We are also officially listed with NANDO (New Approach Notified and Designated Organizations) as an RCB for the sector "Sectoral Annex on Radio and Telecom Equipment" for the following areas:

- Article 38-2-2 Paragraph (1) Item i) of Radio Law (License not required)

- Article 38-2-2 Paragraph (1) Item ii) of Radio Law (Radio stations prescribed in Article 27-2(i).Radio Law)

- Article 38-2-2 Paragraph (1) Item iii) of Radio Law (Others)
  (All of the Specified Radio Equipment)

- Telecommunications Business Law according to Article 52(2) of TBA

- Article 4 of the Regulations Concerning Technical Standards Conformity Certification for Terminal Equipment

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SmartCard & Identification Testing

As an internationally recognized test laboratory, our service includes tests in the area of ePayment (payment transactions) as well as many further tests / certifications in the areas of eHealth, eTicketing, ePassport and biometrics.

Renowned providers of payment systems such as Mastercard, Visa, AMEX, Discover, UPI, JCB, Die Deutsche Kreditwirtschaft, NEXO, KLSC and EMVCo rely on our services for contact and contactless payment products.

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SmartCard & Identification Testing

Our biometrics laboratory offers comprehensive fingerprint testing services (Mastercard, VISA). We are also accredited as a test laboratory for Google in the field of facial recognition.

In addition, we offer tests on eTicketing systems for the Association of German Transport Companies (VDV) and are the only test center worldwide recognized by the Federal Office for Information Security (BSI) for RF interfaces of electronic travel documents.

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Approval of emergency call systems

We have been active in the testing and approval of emergency call systems since 2017. As part of the introduction of the eCall emergency call system for vehicles in the EU, we were involved in the standardization and establishment of the specifications for eCall systems at an early stage.

We also offer services for ERA-GLONASS, the counterpart to eCall for the Eurasian Customs Union.

In addition to emergency call systems for vehicles, we also offer the approval of emergency call systems for cell phones - the so-called E112.

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Approval of emergency call systems

Services for EU/UNECE eCall as a technical service (KBA, TRAFICOM and NSAI):

- EU eCall - Regulation (EU) 2017/79 incl. ITU-T P.1140
- UNECE eCall - UN-R 144 EMC - UN-R 10 (Annex 7-10 and 17-22)

Services for NG eCall

- ISO/IEC 17025 accredited by the German Accreditation Body (DAkkS) for all NG eCall specifications

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Approval of emergency call systems

ERA-GLONASS services
- Testing according to several GOST standards
- Pre-certification for GOST Standard 33468 (Audio Quality)
- Certification processing
- Consulting and project management

E112 services
With our well-established E112 testing capabilities, we are the world's leading laboratory for E112 testing and are therefore predestined to test and approve the emergency call function in cell phones on the basis of the ETSI TS 103 625 and ETSI TS 103 825 specifications.

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Cybersecurity Testing

With our IoT cybersecurity services, we verify the current security status of your networked devices - an important milestone in the market launch of your products. Benefit from our many years of experience in the regulatory certification of products with wireless technologies.

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Cybersecurity Testing

We offer you tests and approvals in accordance with the following standards and specifications:

- Testing in accordance with CEN/CENELEC EN 18031-1, EN 18031-2 and EN 18031-3 and certification in accordance with RED Article 3.3 (d), (e) and (f)
- Regulation (EU) 2022/30 - RED Article 3.3 (d), (e) und (f) inlcluding Notified Body assessment
- ETSI EN 303 645, ETSI TS 103 701 and ETSI TR 103 621
- CTIA Cybersecurity certification test plan for IoT devices
- The "CSC - CyberSecurity Certified" label

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CERT

CERT combines the useful functions of an intuitive software with the advantages of a digital solution for clear project management and is your guarantee for effective approval monitoring.

CERT is our digital solution for having all relevant information at your fingertips.
The tool simplifies your processes, gives you a transparent view of all planned, ongoing and completed projects at all times and provides lots of additional information for the approval process: Anywhere and at any time.

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CERT

Certificate management
- Management and monitoring of certificates, prompt reminders via email

Document management
- Central management of approval-relevant files

Product labeling
- Detailed information on product labeling requirements

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CERT

Country-specific approval information
- Certificate validity, lead times, regulatory updates, required product labeling

Frequencies
- Information on the most common frequency ranges and the associated technologies

Country overview
- Approval information based on different countries and regions

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More than the standard

Many thanks

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