



Die Nationale Akkreditierungsstelle / *The National Accreditation Body*

AKKREDITIERUNG AUSTRIA

bestätigt die Akkreditierung der Rechtsperson / *confirms the accreditation of*

AVL List GmbH

Hans-List-Platz 1, A-8020 Graz

Identifikationsnummer / *ID-number*: **0626**

als / as

Kalibrierstelle / *Calibration Laboratory*

gemäß / *according to*

EN ISO/IEC 17025:2005

Datum der Erstakkreditierung / *Initial date of accreditation*: **19.09.2012**

Standorte/Organisationseinheiten / *sites/units*:

AVL - Kalibrierlabor Babenbergerstraße, Babenbergerstraße 88, A-8020 Graz
AVL - Kalibrierlabor Exerzierplatzstraße, Exerzierplatzstraße 60, A-8020 Graz
AVL - Kalibrierlabor Wiener Straße, Wiener Straße 54, A-8020 Graz

Informationen zum Akkreditierungsumfang und zu Akkreditierung Austria / *Information about the accreditation scope and Akkreditierung Austria* <http://www.bmdw.gv.at/akkreditierung>

Die Akkreditierung wurde mittels Bescheid erteilt und damit bestätigt, dass die Konformitätsbewertungsstelle die angeführten Anforderungen erfüllt. Diese Bestätigung darf nur unverändert weiterverbreitet werden.

The accreditation was granted by a decree which confirms, that the Conformity Assessment Body fulfills the given requirements. This confirmation of accreditation may not be reproduced other than in full.

09.02.2018

Datum / *Date*

Dipl.-Ing. Dr. Norman Brunner

Leiter Akkreditierung Austria / *Head Akkreditierung Austria*



Revision: 08

Ausgabe: Juli 2017

In Kraft gesetzt:

QUALITÄTSMANAGEMENT- HANDBUCH ISO 17025:2005

31.5.2012

(ITS GF Hr. Voigt; Datum Unterschrift)

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internal

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AVL List GmbH
 Hans-List-Platz 1
 8020 Graz
 AUSTRIA



AVL List GmbH
 Hans-List-Platz 1
 8020 Graz
 AUSTRIA



Calibration body for flow rate as well as Voltage and Current
 accredited by
 AKKREDITIERUNG AUSTRIA

5266
ÖKD 39
03.11.2015

Calibration mark

Calibration Certificate according to ISO/IEC 17025

Test Device	PLU Flow Sensor
Manufacturer	AVL
Type	PLU 121 - 075 Flexfuel
PN	BX3407
Serial Number	
SN System	
SN Sensor	2154
SN Pump	2154
Customer	3578973
Calibration No.	5266

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements according to the International system of Units (SI).

Akkreditierung Austria is a signatory to the multilateral agreements of the European Co-operation for Accreditation (EA) and of the International Laboratory Accreditation Cooperation (ILAC) for the mutual recognition of calibration certificates.

Number of Pages of the Certificate: 4

Date of Calibration 03.11.2015 07:13

This calibration certificate may not be reproduced other than in full. Calibration certificates without signature and seal are not valid.



Date/Time
 03. Nov. 2015

Authorized Person
 Platz

Tester
 Saucer

AVL List GmbH
 Hans-List-Platz 1, 8020 Graz, Austria
 Tel. +43 316 787-0 Fax +43 316 787-100
 Email: lifo@avl.com, www.avl.com

Firmenbuchnummer: FN 53507M
 Landes- als Handelsgericht Graz
 UID-Nr.: ATU28252908

Agenda

- 10.00 Arrival and presentation of participants
- 10.15 Short introduction to AVL (if needed)
- 10.30 Presentation of the certification work
(including Q&A)
- 12.00 Lunch
- 13.00 Tour of AVL-MTC Haninge
- 13.30 Wrap-up
- 14.00 Departure from AVL-MTC Haninge



Certification & Type Approval Testing

AVL MTC

Certification & Type Approval Testing

- Basic regulations & standards
- Roles & functions
- How to become a Technical Service
- Type approval workflow
- Accredited organisation AVL MTC
- Background of AVL MTC
- Main fields of operation as Technical Service
- Q&A

Basic regulations & standards

REGULATION (EU) 2018/858

..on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC

- General req. for Type Approval
- WVTA
- Test methods
- Etc..



EUROPEAN STANDARD ISO/IEC 17025 & 17020

General requirements for the competence of testing and calibration laboratories

Test laboratory:

- Structure
- Competens
- Calibration
- Validation/correlation
- Etc..



Roles & functions



ISO/IEC 17025

- Test lab quality



- National Accreditation Body - Annual assessments of ISO compliance (16 months)



EU or ECE REGULATIONS

- Test methods & requirements



Technical Service

- Witness
- Test reports
- Technical expertise
- Etc..



Authorities

- Official appointment
- Grants or rejects Type Approval

How to become a Technical Service?



The process of being appointed as an Official Technical Service requires both assessment by accreditation body and appointment by Authority

Often take more than a year to complete!

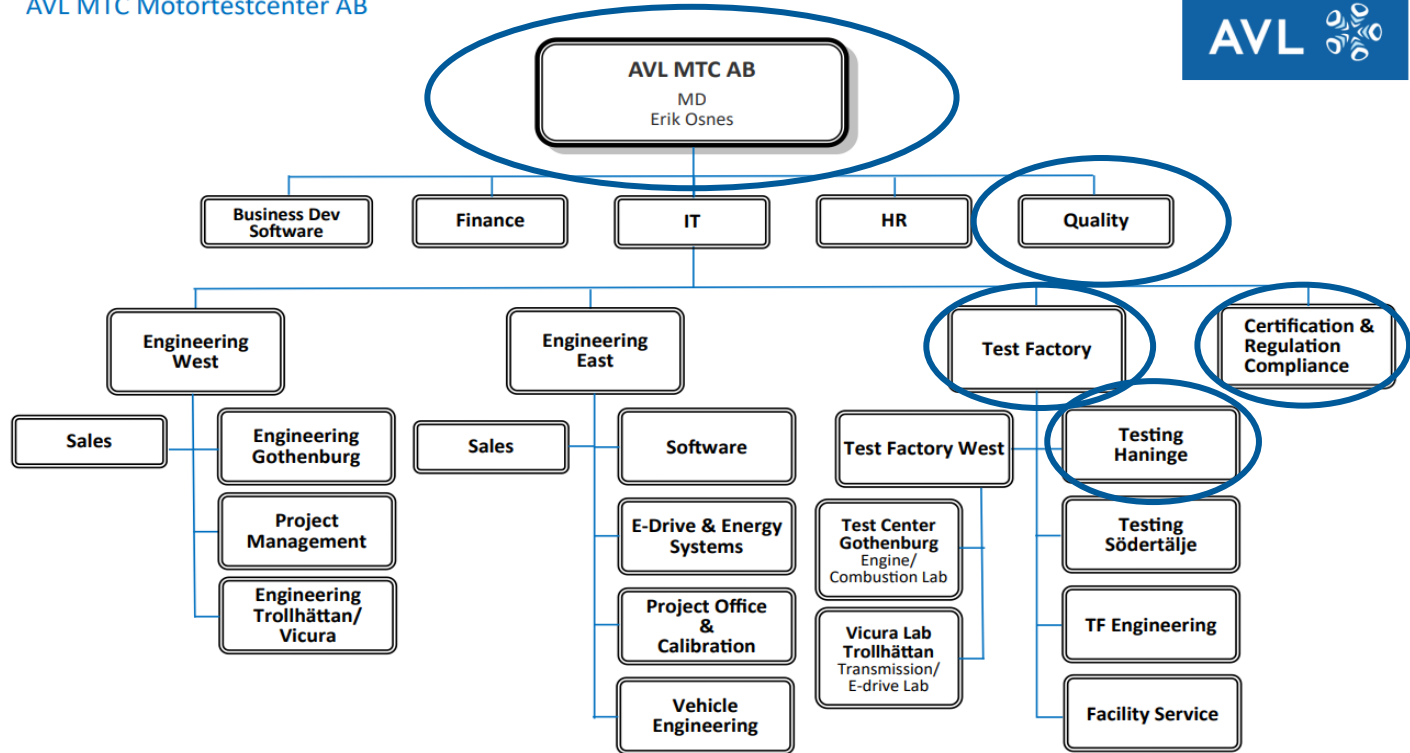


Type approval workflow



Accredited organisation AVL MTC

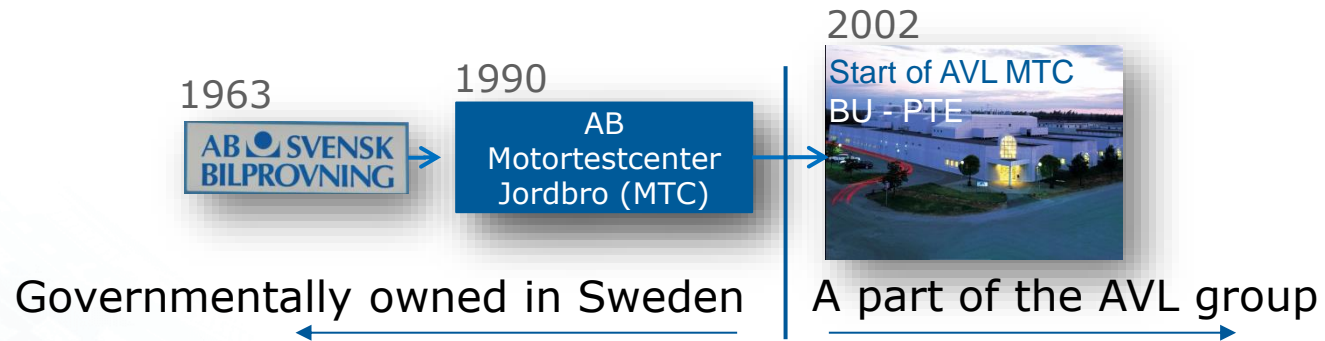
AVL MTC Motortestcenter AB



Akred. nr. 1232
 Provning
 ISO/IEC 17025

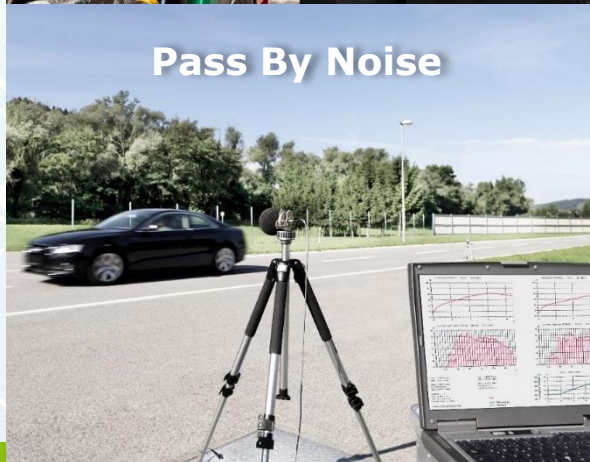
Background of AVL MTC

AN OFFICIAL TECHNICAL SERVICE



- Long history with type approvals and regulations from being governmentally owned
- Haninge Tech Center is an **Accredited Laboratory** (according to ISO/IEC 17025) **since 1992**
- When EU legislations were adopted in Sweden the certification team was appointed as Technical Service by Swedish Type Approval Authority
- Technical service nomination remained after AVL's acquisition of MTC in 2002

AVL MTC - Certification & Regulation Compliance



Main Fields of Operation:

- Emission, Fuel Consumption and Power Certification of Pass-Car
- RDE for LD and HD vehicles/machinery
- Pass By Noise for Pass-Car and Motorcycles
- Emission and Power Certification of Heavy Duty Engines (On-Road & Non-Road)
- Safety, Mass/Dimension and Mechanical Testing of Components for vehicles and trailers



Akkred. nr. 1232
Provning
ISO/IEC 17025



Akkred. nr. 1232
Kontroll
ISO/IEC 17020 (A)

Questions?



Thank you



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AVL



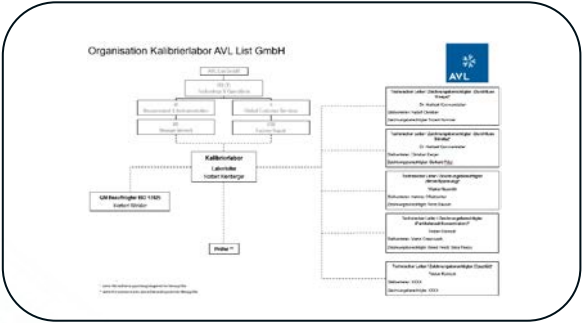
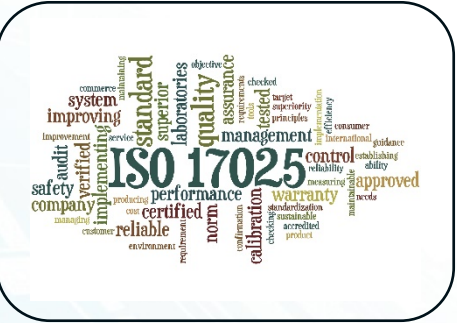
AVL List GmbH (Headquarters)



ISO 17025 - actual scope and general overview of calibration

Winkler Herbert

Agenda



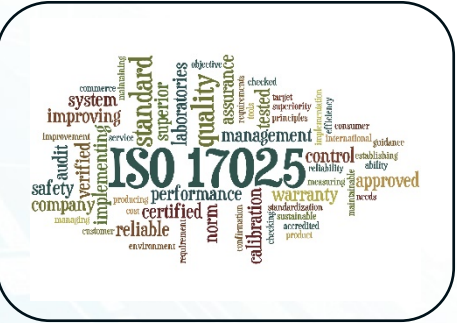
Why ISO 17025

ISO 17025 Lab ORGANIZATION

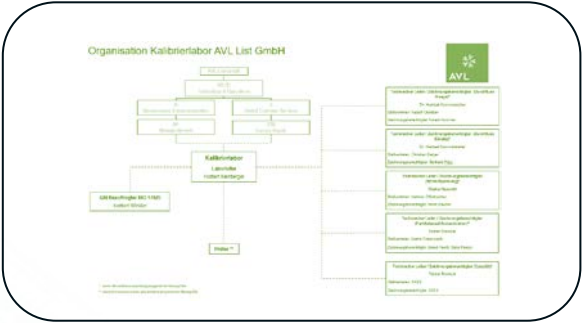
ISO 17025 Lab Locations + Scope

QM System ISO 17025

Agenda



Why ISO 17025



ISO 17025 Lab ORGANIZATION



ISO 17025 Lab Locations + Scope



QM System ISO 17025

Why ISO 17025 ?

- ISO17025 is a worldwide accepted standard for ensuring the competence of testing and calibration laboratories

Quality System Acc. ISO9001
(processes, documentation, ...)



Technical Requirements
(equipments, traceability, uncertainty, ...)



- Accreditation of a laboratory with respect to ISO17025 can only be done by the national accreditation body



Governmental
accreditation
body

accreditation

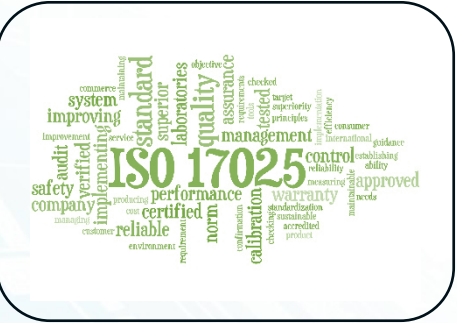


Why ISO 17025 ?

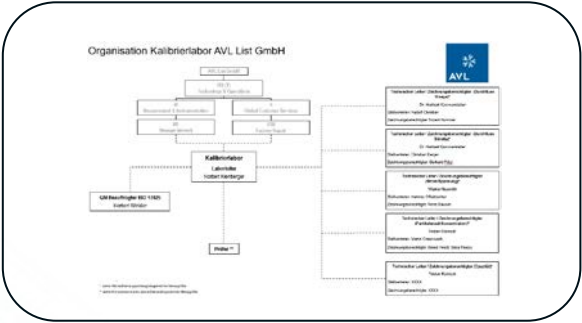
Why is a laboratory's technical competence so critical to you as a manufacturer, supplier, exporter or customer?

- A benchmark for performance
- A marketing advantage
- International recognition for the laboratory
- Minimize risk
- Avoid expensive retesting
- Enhance customer confidence
- Reduce costs and improve acceptance of the goods overseas

Agenda



Why ISO 17025



ISO 17025 Lab ORGANIZATION

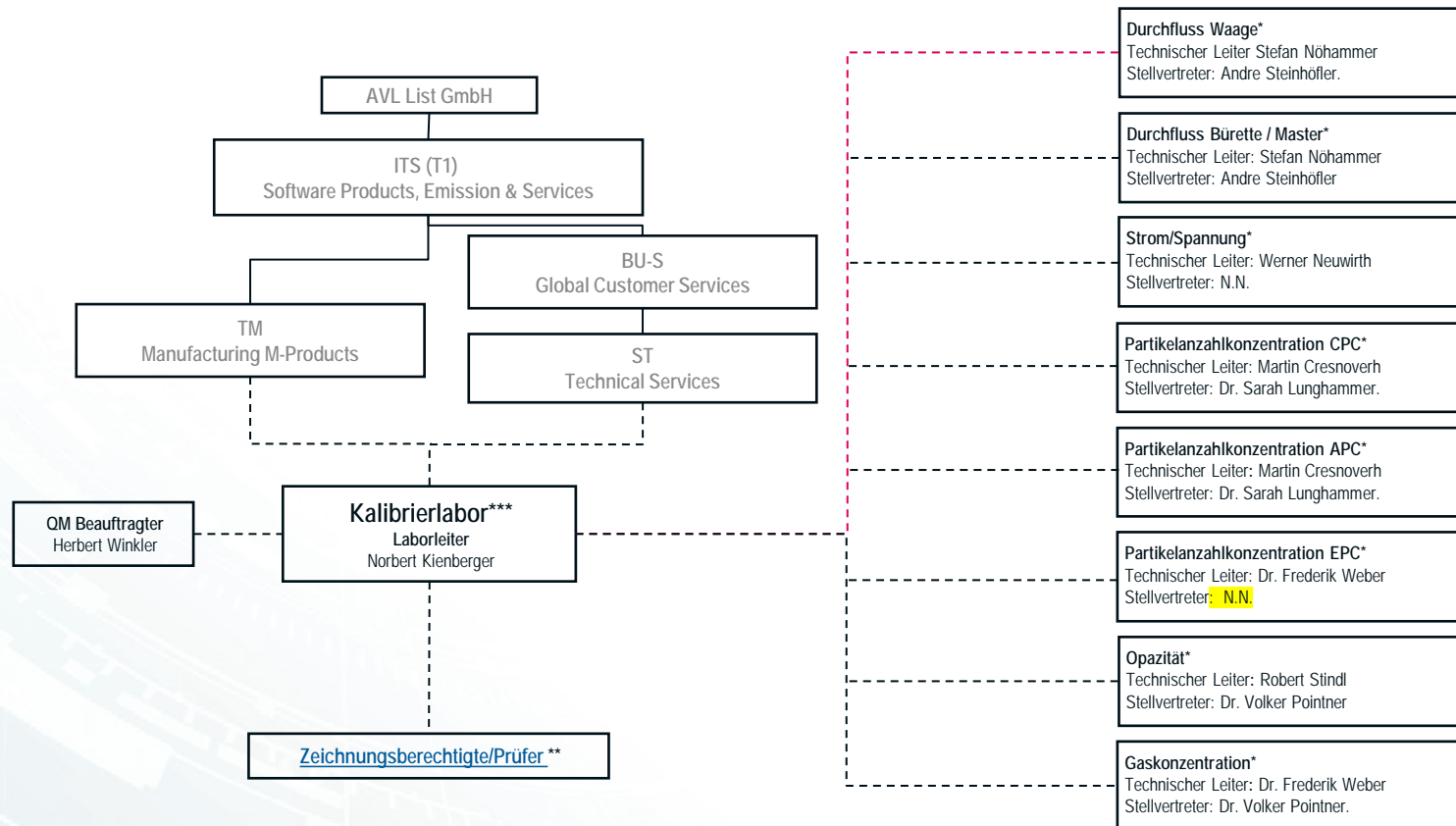


ISO 17025 Lab Locations + Scope

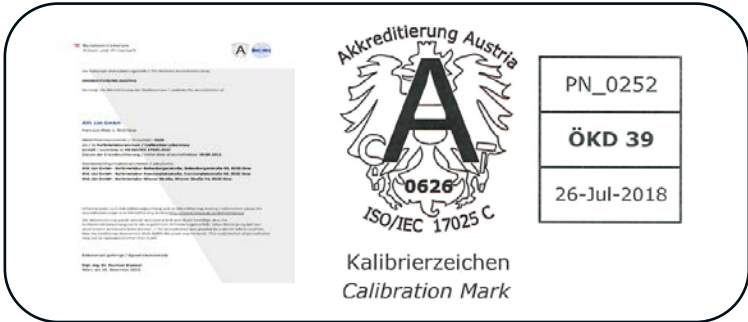
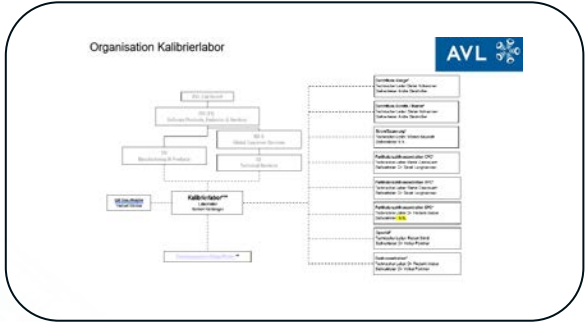
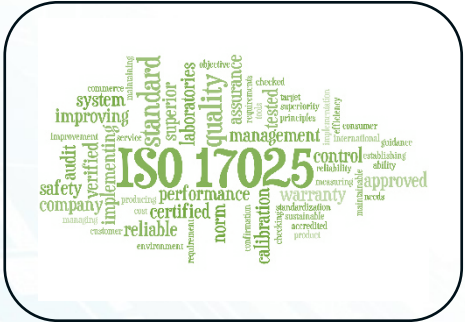


QM System ISO 17025

Organization Chart ISO 17025 LAB



Agenda



Why ISO 17025

ISO 17025 Lab ORGANIZATION

ISO 17025 Lab Locations + Scope

QM System ISO 17025

Location + Scope

Akkreditierung Austria

**Akkreditierte Kalibrierstellen/ Accredited Calibration Laboratories*)
gemäß / according to EN ISO/IEC 17025:2005**

lfd. Nr. 27

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Wiener Straße 54, A-8020 Graz

Kontaktperson/
Contact

Telefon/ Mobile

Fax

Email

Datum der Erstakkreditierung/
Initial Accreditation Date

Dipl.-Ing.(FH) Norbert Kienberger

0316/787-4717 / 0664/8523863

0316/787-132

norbert.kienberger@avl.com

2012-09-19



Requirements become Challenges

Grundsätzlich zu erfüllen:

[ISO 17025:2017](#)

[Österreichische Gesetze](#)

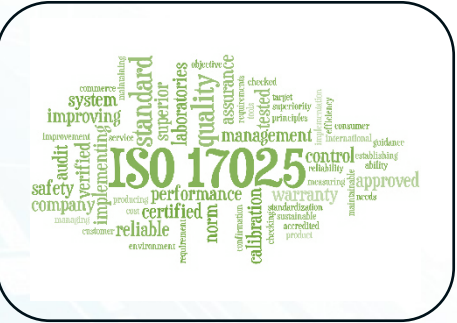
AkkG
AkkZV
AkkGebV
AkkVV

Leitfäden der ILAC (International laboratory Accreditation Cooperation)

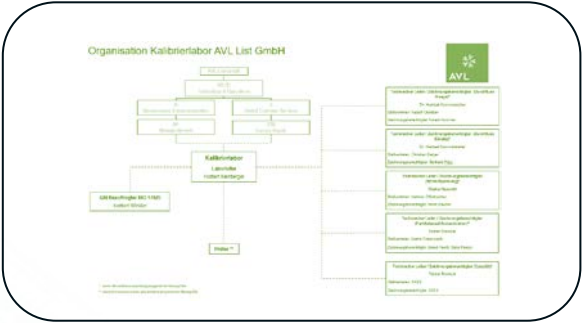
Leitfäden der EA (European Co-operation for Accreditation)

Leitfäden der AA (Akkreditierung Austria)

Agenda



Why ISO 17025



ISO 17025 Lab ORGANIZATION



ISO 17025 Lab Locations + Scope



QM System ISO 17025

Special requirements for ISO 17025

- **Technical competence** of staff (matrix)
- **Validity** and appropriateness of methods used
- **Traceability** of measurements and calibrations to national standards
- Appropriate application of **measurement uncertainty**
- Suitability, calibration and maintenance of **test equipment**
- The **testing environment**
- Sampling, handling and transportation of test items
- **Quality assurance** for each test, inspection or calibration data

QM_System ISO 17025

Quality Administration:

- QM - Manual
- Procedures (mainly from ISO 9001)
- Job contracts
- Training program
- List of Authorization

Technical Administration:

- Calibration instructions
- Intralaboratory comparison
- Proficiency testing program

Accreditation since 2012 from Austrian Accreditation body

“Akkreditierung Austria” (BMWD_ Federal Ministry Republic of Austria Digital and Economic Affairs)

Due to country specific requirements (national laws) by the national authority the installation of a global QM-System for ISO 17025 is not possible.

Thank You



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AVL Calibration Services

Quality and reliability ensured by ISO 17025 accreditation

THE CHALLENGE

When it comes to evaluating measurement results, there is no room for interpretation. This makes calibrating your measurement instruments on a regular basis essential. The calibration method itself and the resulting factors, such as measurement uncertainty and the constant monitoring of applied measurement standards, are subject to strict quality requirements.

THE SOLUTION

Laboratory management according to the ISO 17025 standard aims to secure the results of calibrations as well as the technical credibility and competence of laboratories. Calibration services according to ISO 17025, focus on the quality and the reliability of the applied calibration methods. These factors play a decisive role in ensuring the quality of measurement results and are therefore essential when it comes to developing and certifying drive trains and vehicles.

THE ADDED VALUE

- Worldwide network of certified AVL repair centers
- Fixed price to each calibration service
- Calibration services and annual maintenance combo to keep your equipment at its best

SOLUTION OVERVIEW – CALIBRATIONS ACCORDING TO ISO 17025

MEASUREMENT QUANTITY	F-FEMS (I/O Automation Systems)	Condensation Particle Counter (CPC)	AVL Particle Counter	PN PEMS IS / iS+ Z3 nm	AVL GAS PEMS iS / iS+, iX, HD	AVL Opacimeter	AVL Smokemeter 415 SE	Coriolis Mass Flow Sensors	PLUtron and PLU Flow Sensors	AVL Gas Dividers and AVL CFO Kits	AVL CVS and AVL PSS	AVL Emission Analyzers	AVL Smart Sampler	AVL List GmbH (Austria)	AVL Emission Test Systems (Germany)	AVL Test Systems Inc. (North America)
DC voltage	•													•		•
DC current	•													•		•
Particle number concentration EPC 23 nm				•										•		
Particle number concentration CPC 23 nm		•	•											•		•
Particle number concentration CPC 10 nm		•	•													•
Particle concentration reduction factor (PCRF)			•											•		•
Volatile particle removal efficiency (VPRE)			•											•		•
Gas concentration (CO, CO ₂ , NO, NO ₂ , C ₃ H ₈ , CH ₄)					•									•		
Opacity						•								•		•
Fliter smoke number							•									•
Fuel mass flow								•						•		•
Fuel volume flow									•					•		•
Amount of substance (NO _x , THC, CO, CO ₂ , O ₂)											•					•
Gas flow										•	•				•	•
Dilution flow, probe flow, total flow												•				•
Temperature											•				•	
Pressure											•				•	

HOW DOES IT WORK?

Each calibration service has a specified turnaround time that indicates the time between receiving the goods in our repair centers and the return shipment. For certain equipment, it is essential to schedule the service in advance to ensure that the turnaround time is kept. This applies to APCs, CPCs, PN-PEMS, GAS Dividers and AVL CFO Kits, PLU and PLUtron Sensors.

THE SCOPE OF SUPPLY

Depending on your requirements, the scope of delivery ranges from a pure calibration to a so-called flat rate service, which covers necessary repairs additional to calibration and maintenance.

WHAT DOES THE SERVICE COST?

Each calibration service has a fixed price. In the scope of our flat rate service, calibration, maintenance and necessary repair are covered.

December 2021, Classification Public

FIND OUT MORE

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