

2.2 Organization

2.2.1 Levels of the quality management system

Div. Z Administrative Services	Div. 1 Mechanics and Acoustics	Div. 2 Electricity	Div. 3 Chemical Physics and Explosion Protection	Div. 4 Optics	Div. 5 Precision Engineering	Div. 6 Ionizing Radiation	Div. 7 Temperature and Synchrotron Radiation	Div. 8 Medical Physics and Metrological Information Technology	Div. 9 Legal and International Metrology	Abt. Q Cross-sectional Services	Stelle IT- Infrastructure)	Conformity Assessment Body)	Institutes at PTB
S.Wiemann	Dr.T.Schrader	Hon.-Prof. Dr.U.Siegner	Dr.B.Güttler	Hon.-Prof. Dr.S.Kück	Dr.H. Bosse	Dr.J.Stenger	Prof. Dr.M.Richter	Prof. Dr.T.Schäffter President's Representative in Berlin	Dr.F.Lienesch	M.Gahrens	Dr.M.Gutbrod	Dr. Prof. h.c. F.Härtig	QUEST Prof. Dr.P.Schmidt FPM Dr.A.Surzhykov
QMV Z K.Anton	QMV 1 Dr.C.Schlegel	QMV 2 Dr. A. Müller	QMV 3 Dr.J.Könemann	QMV 4 Dr.J.Ledig	QMV 5 Dr. I. Busch	QMV 6 Dr.R.Behrens	QMV 7 Dr.R.Klein	QMV 8 Dr.D.Rosu	QMV 9 Dr.M.Czaske	QMV Q H.Strunk	QMV IT G. Vauti	QMV CAB Dr.H.Stolz	QMV QUEST/FPM Dr.J.Keller

Senior Quality Manager
WG PSt 2 „Central Quality Management“
[Dr.K.Stoll-Malke](#)
Executive of „Quality Management Committee“ (A-QM): B. Just

Vice-president
Deputy of Senior Quality Manager
[Dr. Prof. h.c. F. Härtig](#)

President
[Prof. Dr. C. Denz](#)

*) across location for Braunschweig and Berlin acting

Ombudspersons for safeguarding good scientific practice
Braunschweig: [Dr.C.Koch](#)
Berlin: [Prof. Dr. M. Bär](#)

Figure 2.2.1: Levels of the quality management system

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Figure 2.2.1 shows the different levels of PTB's quality management system. A detailed and permanently updated [Organizational Chart](#), with information about the organizational units and their heads, as well as a [Schedule of Responsibilities](#), which is permanently updated, are available at the individual divisions of PTB. Organizational changes are published by [Internal Memoranda](#).

The PTB is a hierarchically organized authority headed by the **President**. Permanent representatives of the President are the **Vice-president** and, if he is tied up with business, the **Member of the Presidential Board**. They form the Presidential Board, which is responsible for coordinating the management tasks. Most of the divisions are located in Braunschweig, Divisions 7 and 8 are located in Berlin. For assuming tasks resulting from the spatial separation between Braunschweig and Berlin, the President appoints a permanent representative for the Berlin part of PTB. This representative has the title "**Head of the Berlin Institute and the President's Representative in Berlin**". The President appoints also the deputy for this function. Assigned to the Presidential Board are the department "Presidential Staff", the staff office "Press and Information", the "Conformity Assessment Body" and the Department "Technical-scientific Infrastructure Berlin". The **Senior Quality Manager** is represented by the Vice-president and is subordinate to his technical supervision. In his activity, the **Senior Quality Manager** is supported by the Working Group (WG) PSt 2 "**Central Quality Management**". Details can be taken from the paper "[Division of Tasks in the Presidential Board](#)" in accordance with the "[Statutes of PTB](#)".

The divisions of PTB are subdivided into departments and sections. The department, as the basic organizational unit for scientific-technical tasks, and the section, as the basic organizational unit for the infrastructure, comprise one or several areas of tasks which are, if possible, interrelated and have tasks of unpredictable duration. In justified cases, tasks of the infrastructure may be combined into groups. For special tasks, staff offices are established which are directly related with PTB's top management.

With regard to the division-specific further development, coordination and maintenance of the quality management system, the **Heads of the Divisions/Bodies** of the PTB are supported by special **Quality Managers (QM)**. In this function, they are subject to the administrative supervision of the **Head of the Division/Body**. These special Quality Managers are proposed by the **Heads of the Divisions/Bodies**, in consultation with the Senior Quality Manager, and appointed by the President. In addition, the President appoints the ombudspersons officers for the safeguarding of good scientific practice in accordance with the [QP "Rules for the safeguarding of good scientific practice"](#). These persons will be the contact persons at the two PTB sites, in Braunschweig and Berlin.

The **Heads of the Divisions/Bodies**, represented by the special Quality Managers, form the "**Quality Management Committee**" (**A-QM**) which, under the direction of the **Senior Quality Manager**, implements the quality management relevant decisions and stipulations of the Presidential Board on the basis of the [Standing Orders of the A-QM](#) and advises the President in fundamental decisions of quality management, e.g. as regards the further development of the quality management system.

The **core services of PTB** are described - within the framework of the quality management system - in the service offers of the eight specialist divisions. They comprise the tasks for the realization of the legal units in metrology (national standards), the calibration, measurement and testing capabilities for the dissemination of the units in legal metrology, and the respective research and development services at the national and international level. The structure of the specialist divisions essentially corresponds to the main areas of physics with the focus being placed on application- and industry-oriented fields.

Division 9 deals with the general tasks in legal and industrial metrology. This comprises especially the cooperation with the German verification authorities and the accredited calibration laboratories. Furthermore the division coordinates the international cooperation in the area of quality infrastructure for the German government.

The **supporting services** required for these core services are rendered by Division Z "Administrative Services" and Division Q "Cross-sectional Services". Division Z incorporates the internal service sections of the PTB from classical administrative tasks to the coordination and planning of initial and advanced training. In Berlin, an administrative section is seated. The portfolio of Division Q comprises the technical as well as the infrastructural facility management including IT-services, the academic library and the foreign languages office.

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To support both PTB sites in the coordination of the services of the IT infrastructure, the body "IT Infrastructure" has been established within the scope of the quality management system. It integrates the corresponding organizational units in Braunschweig and Berlin. The preparation and support of the technical-scientific infrastructure at the location in Berlin is carried out by the Department "Technical-scientific Infrastructure Berlin".

A Conformity Assessment Body according to the Measure and Verification Act has been established to support the specialist divisions in the rendering of conformity assessment services as Notified Body 0102 on the basis of European directives, as an approval authority in accordance with the German Verification Act, the Weapons Law and Proof Testing Act, as a recognized body in accordance with the IECEx system and the OIML certification system. This Conformity Assessment Body includes employees from Braunschweig and Berlin temporarily in corresponding conformity assessment procedures.

As part of the research cooperation with other scientific institutions PTB institutes have been set up, which are assigned directly to the **Presidential Board** in accordance with the **"Statutes of PTB"**, Section 8, Paragraph 4. In justified cases, research groups with different statuses can be set up within the institutes. It is the Institute for Experimental Quantum Metrology (QUEST), which conducts experimental basic research in the field of time and frequency metrology as well as research and development work in the field of quantum technologies. Furthermore, the Institute for Fundamental Physics for Metrology (FPM) was founded. This institute examines the structure and dynamics of individual atoms and atomic ensembles. The aim is to develop new metrology standards, determine natural constants and test fundamental symmetries in nature. In the QM system, the PTB institutes are regarded as one body, the management of the PTB institutes are represented by a QMV in the **"Quality Management Committee" (A-QM)**.

The levels of the quality management system within the individual divisions/ bodies are described in the quality manuals of the individual divisions/bodies and are not pre-determined by the central quality management.

2.2.2 Tasks and responsibilities

On the basis of the latest organization chart and the paper **Working Programs** set up every year for each organizational unit, Division Z compiles a **Schedule of Responsibilities** for the whole PTB which is permanently kept updated. The tasks to be complied with are assigned to the individual staff members. The areas of work are delimited by relevant criteria and overlapping responsibilities are avoided. Detailed descriptions of the activities forming the basis for salary classification are to be found in the personnel files of all staff members. The paper **Statutes of PTB** bindingly specify the course of business for all staff members. The principles of conduct among the staff members are defined in the paper **"Guidelines for leadership and cooperation"**.

The **Senior Quality Manager** must ensure that the quality management system is introduced and complied with at any time. Within this meaning, he is responsible for the technical supervision of all levels of the quality management system (see **Figure 2.2.1**). He has direct access to the **Presidential Board**, to the **Heads of the Divisions/Bodies** and to the **Quality Managers of divisions/bodies**.

The **Presidential Board** and the Heads of the Divisions/Bodies take the quality management system into account for their decisions on principles and the use of funds. In this task, they are supported by the **Quality Manager of the Divisions/Bodies**. In cooperation with the appropriate **Quality Manager of the Division/Body**, the **Head of the Division/Body** regulates the scope of the delegation of tasks and responsibilities. The **Quality Manager of Division/Body** has to inform his management or bring about decisions of the management, taking this scope into account.

Figure 2.2.2 shows the tasks and responsibilities of the **President**, of the **Senior Quality Manager**, of the **Executive Office "Central Quality Management"**, of the **Heads of Division/Bodies** and of the **Head of the Division Z "Administrative Services"** as regards the quality management system of the PTB. In the quality manuals of the divisions/bodies, the tasks and responsibilities within the quality management system are further detailed for the specific activities.

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R Responsibility for implementation
C Cooperation
I Information

1 President of PTB
2 Senior Quality Manager of PTB
3 WG PSt 2 "Central Quality Management"
4 Heads/Quality Managers of Div.1-9,Q,bodies
5 Head of Division Z/Quality Manager Z

Quality manual	Task	1	2	3	4	5
Chap.0	Quality manual of PTB					
	Creation, updating, distribution	I	I	R	I	I
	Checking	I	R			
	Approval	R	I	I	I	I
	Quality procedure (QP) of PTB					
	Creation, updating, distribution	I	I	R	I	I
	Checking			I	R	R
	Approval	I	R	I	I	I
Chap.0	Quality manual of divisions/ bodies					
	Creation, updating, distribution	I	I	I	R	R
	Checking		I	R	I	I
	Approval	I	R	I	I	I
	Working instructions of divisions/ bodies					
	Creation, updating, distribution, checking, approval	I	I	I	R	R
	Services offered by PTB					
	Creating, updating, distribution	I	I	I	R	C
Chap.1	Checking		R	C	I	I
	Approval	R	I	I	I	I
	Rooms and facilities of PTB					
	Provision, management, operation	R	I	I	R	R
	Specifications for access and cleaning	I	I	I	I	R
	Calibrations/tests/measurements outside the permanent PTB facilities		I	I	R*	
	Quality policy of PTB					
	Definition, updating, representation	R	C	I	I	I
Chap.2	Levels of the quality management system of PTB					
	Definitions, maintenance	R	C	I	I	C
	Tasks and responsibilities in the quality management system of PTB **					
	Definition, updating	I	R	C	C	C
	Job description	I	C	C	R	R
	Compliance with rules for good scientific practice	R	R	R	R	C
	Internal Audits					
	Planned audits		C	I	R	R
Chap.3	Additional audits	I	C	I	R	R
	External assessments					
	Advance notice and approval	I	R	I	C	I
	Comparison measurements					
	Participation, interpretation	I	I	I	R	
	Self-Review of quality system					
	Divisions/bodies	I	I	I	R	R
	PTB	R	C	C	I	I
	Review of quality system by third parties					
	Coordination of activities	I	R	C	C	C
	External representation	R	R	C	C	C
	Error prevention and improvement	R	R	R	R	R

* without bodies

** Details about supervision/representation s. chap. 2.2.1

Figure 2.2.2:
Tasks and matrix of responsibilities in the PTB quality management system (part 1)

R Responsibility for implementation
C Cooperation
I Information

1 President of PTB
2 Senior Quality Manager of PTB
3 WG PSt 2 "Central Quality Management"
4 Heads/Quality Managers of Div.1-9,Q,bodies
5 Head of Division Z/Quality Manager Z

Quality manual	Task	1	2	3	4	5
Chap.4	Control of records and, if and when required, measurement data	I	C	R	R	R
	Control of inspection, measuring and test equipment		I	C	R	
	Purchasing	R	I	I	R	R
	Subcontracting	I	I	I	R	R
	Training for all PTB tasks		I	I	R	R
	area of quality management		C	R	C	I
	Handling of complaints	I	C	I	R	R
	Control of nonconforming work		I	I	R	
Chap.5	Acceptance of orders and applications				R	C
	Selection and development of methods	I	I	I	R	
	Handling of test and calibration items				R*	C
	Sampling				R*	
	Calibration/testing				R*	
	Result reports				R	
	Completion of order				R	C

* without bodies

** Details about supervision/representation s. chap. 2.2.1

Figure 2.2.2:

Tasks and matrix of responsibilities in the PTB quality management system (part 2)

2.2.3 Staff

PTB employs civil servants and tariff-scale employees. The general qualification requirements for the career groups of the civil service are specified in the Public Service Law of the Federal Republic of Germany. For the tariff-scale employees, the specific requirements ensuing from the work to be carried out are laid down in the job descriptions of the individual staff members. These descriptions are part of the staff files.

The majority of PTB's employees is grouped in the "higher" and in the "higher intermediate" class of the civil service. The "higher service" comprises scientific staff having, e.g. a degree from a university or from a college of technology, or a master's degree from a technical college. These employees have, in the majority of cases, a doctor's degree and, in part, also a postdoctoral lecturing qualification. The "higher intermediate service" encompasses mainly technical employees having a qualification as a graduated engineer (technical college) or as a bachelor or master from a technical college. This career group is supplemented by staff members who have risen to the "higher intermediate service" due to equivalent achievements, many years of experience and the positive results of PTB-internal tests. The other staff members of PTB are in the "intermediate service". Most of them have completed vocational training/an apprenticeship with a certificate of proficiency and some have qualifications as master craftsmen or technicians.

The managerial staff of the quality management (see **Figure 2.2.1**) belongs, as a matter of principle, to the "higher level" of the civil service. In addition to a academic education, these employees have several years of experience in the respective area of responsibility. The Quality Managers in the individual divisions/bodies are usually appointed for five years. The appointed Ombudpersons for safeguarding good scientific practice are - exclusively - experienced scientists who place themselves at the disposal of all employees to render advice and support in questions related with the safeguarding of good scientific practice. The appointment is usually for two years and can be extended.

The staff members are obliged to uphold the protection of confidence, impartiality and personal integrity with respect to customers and to comply with the rules of good scientific practice. Detailed Regulations are laid down in the **QP "Protection of confidence, impartiality and integrity"** and in the **QP "Rules for the safeguarding of good scientific practice"**.

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