



# **Quality Assurance of Research and Third Mission**

## **Table of Content**

1. Introduction
2. The organizational structure of Quality Assurance
3. Quality Assurance of Research and Third Mission
  - 3.1 The players involved in Quality Assurance
  - 3.2 The steps of Quality Assurance
4. Communication in Quality Assurance



## **ACRONYMS**

AC	University Central Administration
ACRE	Communication and External Relations
AGIS	Infrastructures, Estates and General Services
AQ	Quality Assurance
ARUO	Human resources and organization
ASICT	ICT Services
ASRI	Development and Relationship with Companies
AVA	Self-assessment, Periodic Evaluation, Accreditation
CdA	Board of Governors
CdD	Department Board
CR	Research Commission
CCS	Scientific Credential Commission
NdV	University Assessment Commission
PAVA	AVA Board
SA	Academic Senate
SUA RD	Single Annual Report of Research
SUA TM	Single Annual Report of Third Mission
TTO	Technology Transfer Office

### **1. Introduction**

The first purpose of Politecnico is processing and dissemination of scientific, technological, humanistic and economic-social knowledge, the promotion and organization of research, the training of students and professors in the field of architecture, design, engineering and other areas of polytechnic culture promoted by the University.

In this regard, the University has organized the Quality Assurance of Education and Research and Third Mission activities in order to ensure, on the one side, a cultural and professional preparation in line with the best international standards for students, and on the other, the promotion of research topics that combine innovative technology contents with attention to social issues.

This revised document, following the publication of the new ANVUR guideline "Guideline for regular accreditation of university headquarters and programmes", wants to present this system, by defining its objectives and organization with a point of view oriented to continuous improvement.

Therefore, below, it will be briefly presented:

- the University organizational structure for management of Quality Assurance for Research and Third Mission;
- the tools and players that cooperate within the Quality Management System for Research and Third Mission;
- the supporting procedures made available by the University AVA Board and the related flow of documents.

## 2. The organizational structure of Quality Assurance

The University promotes the culture of Quality as organizational tool that, by including all Teaching and Technical-administrative staff in carrying out its activities, is *embedded* in the University system. Basically, Quality Assurance becomes a way of working to ensure that development and improvement objectives are continuously and adequately carried out. Quality Assurance, based on coordinating and planning the activities provided, has its main strength in a continuous connection and communication among University bodies, Schools, Departments, Students and administration offices.

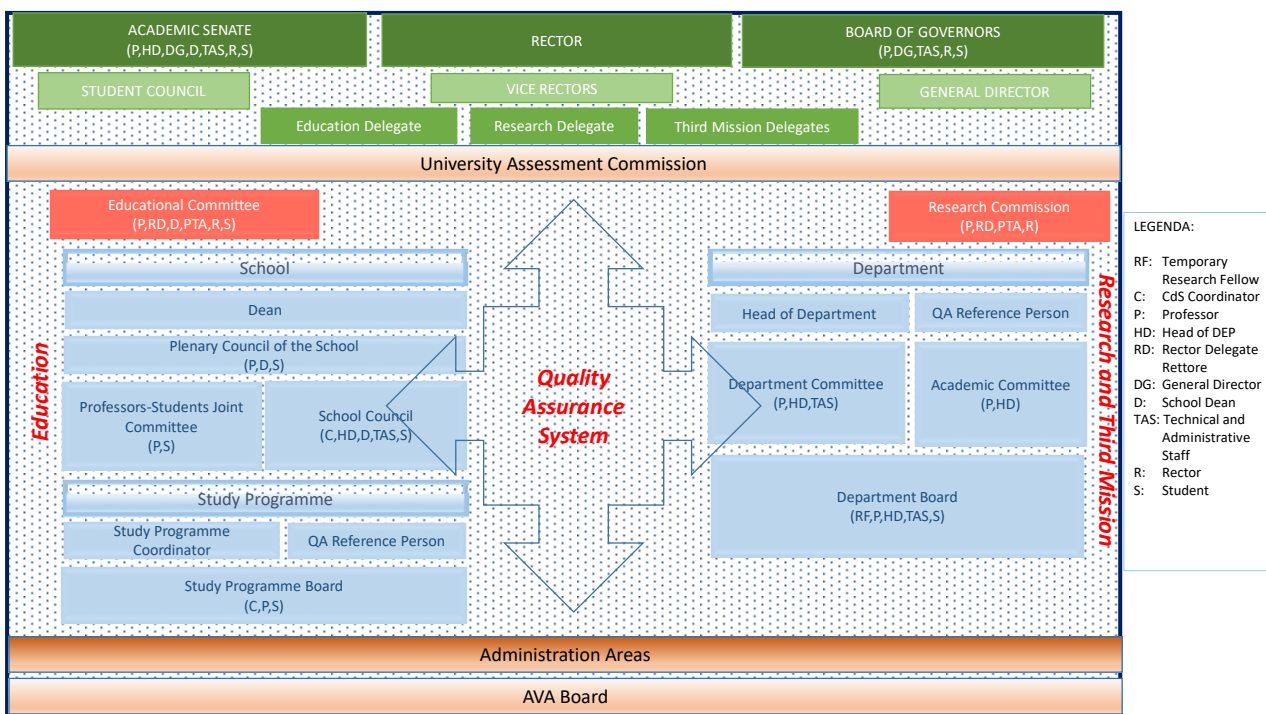


Figure 1 - Representation of the University Quality Assurance system.

This organization system and its monitoring imply:

- to achieve the objectives set by the Departments, in line with the objectives defined by the University;
- a greater knowledge and awareness of the Quality Assurance and internal self-assessment systems set up with a point of view oriented to continuous improvement.

In defining the organization aimed at guaranteeing Quality Assurance, the University has decided to avoid overlapping roles and competences among the various players involved. In this context, in 2013, the AVA Board was established, a technical-operational support tool dedicated to Quality Assurance, made up by Technical-Administrative Staff appointed by the General Director (Prot. 6150 of 27/02/2013 and Prot. 28727 of 04/04/2017).

The AVA Board works in close contact with all the players involved, for the purposes of policy implementation and continuous improvement, based on the general guidelines provided by the University Bodies through the Rector's Delegates for Education, Counselling, Research, Social Policies, Cultural Policies, Sustainability and Technology Transfer.

### **3. Quality Assurance of Research and Third Mission**

#### **3.1 The players**

##### University bodies

The University Bodies, or the Rector, the Delegate for Research, Social Policies, Cultural Policies, Sustainability and Technology Transfer, the General Manager, the Board of Governors and the Academic Senate:

- exercise the direction, initiative and coordination of scientific and educational activities;
- define the Quality Policy, its objectives by promoting its realization, sharing and define the responsibilities necessary to achieve them;
- ensure the implementation and updating of processes for Quality Assurance, aimed at achieving the objectives and continuous improvement;
- guarantee the implementation of the University's strategies and the regular assessment of results.

##### University Assessment Commission (NdV)

The University Assessment Commission directly supports the University *Governance*. It carries out an evaluation of the efficiency and effectiveness of the activities and among its tasks has the task of verifying the productivity of research and education. It evaluates the overall Quality Assurance of the University and monitors that it is properly applied by the Structures through the analysis of the results by audits, when required and necessary. The University Assessment Commission is supported by the Study Service.

##### Research Commission (CR)

The CR is a structure with preliminary functions aimed at facilitating the work of the Academic Senate. It deals with some topics strategically important, its agenda is planned by the Rector or his/her authorized person, that define the activities of the Senate on complex issues such as: VQR, PhD programmes, framework agreements and partnership agreements, Intellectual Property, Scientific Outputs, AVA research.

The CR includes the Rector or his/her Delegate and four members of Senate and Board, with a member that takes coordination functions. Participation is also open to Managers and Technical-Administrative Staff in support areas and services and to other members of Senate or Board interested in specific topics and provisions. The administrative support functions are performed by the Collegiate Bodies Service.

##### Scientific Credential Commission (CCS)

The CCS members are defined by the Academic Senate and are based on representatives: 5 Heads represent the Departments and disciplinary areas and they are a commission that guarantees the internal evaluation process of research products and defines the Scientific Outputs.

The Commission defines the calendar of works by organizing the sequence of actions with the competent Administration offices and by offering support to the offices and players involved.

Departments play a major role throughout the Research Quality Assurance and Third Mission cycle: from previous analysis and evaluation, to planning and costs, intermediate and regular monitoring, up to the assessment of Quality and results.

##### Department

The Department is the University structure that gives value and coordinates human resources for teaching, research and third mission activities. It is responsible for research activities in areas that are coherent with content and methods or objectives, as well as the development of skills for the corresponding educational activities of promotion and development of culture, research and innovation in specific fields of interest



and in new fields connected to them.

The Department, with organizational and managerial autonomy within the limits established by the Statute and the current legislation, is established based on an independent scientific and cultural project. The Regulation provides, in compliance with the Statute and the University General Regulations, the internal organization of the Department, the methods of election, its members and the duration of profiles.

Its bodies are the Head, the Board and the Committee.

The Department carries out research and consultancy activities, as well as technology transfer, testing and certification activities.

#### Head of Department

The Head represents the Department and maintains relations with the University bodies. S/he promotes the activities of the structure and takes care that the current regulations, the Statute and the University regulations will be applied. S/he has a three-year mandate that can be renewed one time.

The Head of Department identifies one or more QA Reference person for coordination of activities related to the requirements of Quality Assurance of Research and Third Mission at department level. These Reference persons can be seen as the main connection point for processes and activities promoted by the AVA Board.

#### Department Board

The Department Board plans and coordinates the research and teaching activities related to the Department, in accordance with the general guidelines expressed by the University bodies and in line with the available resources. At least one elected student representative is part of the Board, enrolled in each one of the PhD programmes promoted by the Department, according to the rules defined by the Department's Regulations.

#### Department Committee

The Committee has the task of assisting the Head and the Board to manage the Department, it carries out preliminary activities. The Regulation of the Department defines how the Committee works.

The Committee is made up of Full and Associate professors, researchers with permanent contracts and at least one member of the administrative and technical staff.

#### Academic Committee or similar body

The Academic Committee, or similar body, carries out preliminary activities and provides advisory opinions on Research and Third Mission. The Head chairs the meeting: its members are defined in the Department's Regulations.

#### Department Manager

The Department Manager, based on the actions assigned, as far as concerned, by the General Director and the Head of Department, implements, coordinates the administrative and accounting activities and is responsible for the administrative and technical staff.

#### Quality Assurance Reference Person of Department

The Quality Assurance team consists of at least the Department's QA reference person and members of the AVA Board with whom it is directly in contact. It supervises the implementation of Quality Assurance at Department level.

The Head identifies among the teaching staff a Scientific contact person who, supported by an Operational contact person identified by the Technical Administrative Staff, works in close contact with the AVA Board. The Quality Assurance Reference Person of Department is the first and most important profile, able to find



problems, even before they arise or are clear and formalized in the monitoring data, and s/he can face them promptly. S/he also has the responsibility to include the professors and the whole department community, with respect to the quality management issues defined at University level; furthermore, s/he is the reference person for possible improvement proposals of Department.

#### Administration Areas

Many of the activities that provide support for Research and Third Mission are managed by the Central Administration offices, through the involvement of administrative and technical staff, included in the University Performance Plan that, with their skills, can effectively carry out what was planned by the Departments.

#### AVA Board

The AVA Board works together with the Rector's Delegates for Research, Social Policies, Cultural Policies, Sustainability and Technology Transfer; it also works with the Heads of Department and QA Department Reference persons.

In general, the AVA Board is responsible to plan and monitor the QA policies, coordinates and supports procedures at the University and Department level, provides initiatives useful to promote quality and suggests common tools for the application of Quality Assurance. Throughout the year, it provides support to all the players involved, by supervising that procedures are properly and clearly applied, by working in close collaboration for the purpose of continuous improvement of the quality of Research and Third Mission.

In addition to the tasks already defined by the Statute and by the University Regulations, each player involved in Quality Assurance is responsible for specific activities that guarantee their implementation.

### **3.2 The steps of Quality Assurance**

The quality assurance procedure consists of four steps through which the activities take place. They describe the process and apply both at the high level, at University level, and at Department level. The four steps are:

- 3.2.1 Design and planning
- 3.2.2 Provision
- 3.2.3 Monitoring
- 3.2.4 Improvement of Research Quality and Third Mission

#### 3.2.1 Design and planning

The research lines, the reference application areas and the specific objectives that the Department wants to achieve are shown in the Scientific Project of Department.

The Scientific Project is prepared every three years or within the first year of the Head's mandate.

The Scientific Project, in line with the University Strategic Plan, is the document that defines the policy of Research and Third Mission at department level. Starting from the overall analysis of the context in which the Research and Third Mission activities of the Department are carried out, it shows the objectives that each Department wants to achieve in the short, medium and long term, as well as the infrastructural and research resources necessary to achieve these results.

The Departmental Academic Committee, or similar body, assists the Head in preparing the document about the scientific project and has a central role for what concerns the QA of Research and TM.

In principle:

- it identifies possible research of strategic interest, to be carried out together with other



departments or other scientific institutions, to be submitted to the approval of the Department Board;

- it takes care of collection of department scientific outputs;
- it provides a proposal of allocation of funds to the Department and to allocate resources in terms of personnel and infrastructure.

The Regulation of each Department specifically defines the duties of the Academic Committee or similar body.

Once the Scientific project has been drawn up, the Department Board (CdD) evaluates the proposal of the Academic Committee, and provides possible modifications or approves it (CdD resolution).

In case of amendment to the document, the Academic Committee of the Department will work on it again before the evaluation and final approval by the CdD.

The Department scientific project is therefore the subject of analysis by the University Research Committee (CR). The CR evaluation can lead to comments and suggestions that will be shared at the Department level. The final version of Scientific Project is then submitted to and approved by the Academic Senate and Board of Governors.

Regarding the planning of Research activities and Third Mission, the Academic Committee of the Department, or similar body, identifies the indicators to follow the development of the project and the objectives defined over time, also through the planning of a specific monitoring schedule.

<b>Departmental Scientific Project</b>	
OBJECT	Identification and approval of Departmental Scientific Project
RESPONSIBILITY	Departmental Academic Committee or similar body
SUPPORT	QA Reference of Department AVA Board
RECIPIENTS	Academic Senate and CdA
PERIOD	Three years
STEPS	By May: drafting of the Scientific project
	By June: approval by the Department Board
	By July: approval by the Research Committee, the SA and the Board of Governors

### 3.2.2 Provision

The department bodies provide their contribution to carry out what planned in line with the specific role defined in the Regulations and with the authorization system used by the Department Management.

The Department has its organization, offices and Functional Organizational Units as defined by the Department Manager, in agreement with the Head of Department and the General Director.

The Organizational Units provide support services, with a specific number of units of Technical Administrative Staff that can change according to their skills, in order to manage and carry out what has been planned.

In order to effectively carry out Research and Third Mission activities, the Department makes use of research laboratories and support services (workshops, libraries, archives, administration, etc.). The research laboratories are specifically designed for the research activities and related to the strategic lines described in the Scientific Project of the Department. The internal organization of the support offices is described in the "Organizational communications" prepared by the Manager and presented in CdD.

The Department also makes use of the support services provided by the University Central Administration

(AC).

#### University support structures and services

For the research activities, there are many structures made available by AC.

Just as example, there are some Support Services, whose actions play an important role during the process of Quality Assurance of Research.

#### *Research Office*

The Research Service is a central structure that provides cross-sector support with the aim of promoting access to the different forms of funding available at local, national and international levels. It provides assistance, carries out specific activities related to research projects and their review. Particular attention is paid to assistance within the European research programmes.

#### *Archives and Library System*

It supervises processes related to management, innovation and development of library and information-documentary services for end users and for structures. The department libraries have been gradually merged into the centralized service of the Archives and Library System that offers services for the use of monographs, magazines, databases, e-books, proceedings, encyclopedias, dictionaries, technical standards, bibliographic databases and citations to all the users of Politecnico.

#### *Catalogue Research Working Group*

It is a working group that provides a cross-sector support to different services and areas of Central Administration, with the aim to preliminary study and provide assistance related to the management of IRIS, the publications catalogue of the authors of Politecnico di Milano. Its monitoring is also connected to the process of internal evaluation of the quality of scientific production, or the University Outputs.

#### *Openaces work team*

It is a working group on open access to scientific literature that provides technical skills for archiving and management of intellectual property rights for the implementation of the university policy according to which professors, researchers and collaborators of Politecnico di Milano must feed the institutional repository, [Re-Public@polimi](mailto:Re-Public@polimi), through the electronic filing of scientific products.

For Third Mission activities, in which Politecnico di Milano has always been very active, there are many structures made available by AC. Just as example, there are some Support Services, whose actions play an important role during the process of Quality Assurance of Third Mission.

#### *TTO (Technology Transfer Office)*

The TTO Service deals with the enhancement of intellectual property. It offers support to transfer knowledge for commercial purposes of all kinds of innovative results in the fields of engineering, architecture and design, from the evaluation of the protection of research results, to the management of preliminary and preparatory phase, up to the filing of patents and of other forms of industrial property. The Service also offers support for negotiation of intellectual property in its different forms of collaboration with the industry and in the preliminary phase for creation of spin-off companies.

#### *Participations and Programmatic Agreements*

The Service deals with preliminary activity and verification of the agreements with the Inter-university Research Centres, Agreements and Framework Collaboration Agreements for what concerns Research and offers support regarding the participation of Politecnico di Milano and its structures to organizations such



as Consortia, Associations, Companies and Foundations.

#### *Career Service*

The Career Service is part of the Division Research, Innovation and Corporate Relations and manages relationships with companies at national and international level to allow students and graduate students of Politecnico to come into direct contact with the labour market.

The Career Service takes care of activating partnership agreements with companies and institutions, organizes meetings between companies and students, such as job fairs, and creates the connection with institutional parties involved in placement issues such as Ministry, Region, associations of the industry, national and international placement offices for the development of possible synergies.

#### *Division Public Engagement & Communication*

Division Public Engagement & Communication, in particular the Communication Service and International Projects, has a role of primary importance for the activities of Third Mission and of Public Engagement. For example, it must be noted the role in terms of communication and general dissemination of events and initiatives on the institutional website.

#### 3.2.3 Monitoring

The monitoring activity, carried out by the Academic Committee or similar body, consists in the definition, collection and analysis of objective data at the Department level, on the progress of the Research and the Third Mission in order to assess its status with respect to what planned. The monitoring activity is based on some main points:

- definition, collection and analysis of objective data based on the trend;
- evaluation of the implementation of the objectives defined;
- evaluation of the implementation of improvement actions.

The main indicators with respect to the defined objectives are shown in the department review document. Some examples of useful data for monitoring are:

- Self-funding: revenue for research, commercial research, teaching, provision of services and tests;
- Research Projects: number and type of projects presented and funded;
- PhD programme: total enrolled students, enrolled students per PhD school, PhD students with ministerial scholarship, number of foreign students;
- Scientific Production and University Outputs: publications, scientific articles published in international and national magazines and *Wos/Scopus* indexed, communications to conferences, patents;
- Scientific CV of professors: data on the activities and skills of research staff in terms of scientific responsibilities (scientific activities and assignments such as national and international research awards, management or participation in editorial committees, different roles in companies, academies, scientific associations);
- Internationalization: data on research staff from foreign countries.

At the central level, the AVA Board collects, over time data and information useful for monitoring and makes them available to the Departments.

Without the SUA-RD tool, for the purposes of the QA for Research and Third Mission, the University uses Iris, the Catalogue of Publications and its *Resources Management* (RM) form. Iris is a valuable QA tool, both



for the improvement of research quality and for the structured management of information requested by Anvur in the research evaluation campaigns. Iris collects and updates information on scientific production and research resources. The *repository* is fed and used by each professor and researcher, department representatives and central administration services/work groups involved in the process. The sum of the elements inserted, at department and central level, flows into the system and gives an overall representation of the resources and results of individual, departmental and university research.

### 3.2.4 Improvement

To ensure that results and pre-defined objectives can match, the Departments plan improvement activities with the aim of making their Research and Third Mission activities more and more responsive to the defined project and to the challenges on strategic topics at international level.

The main self-assessment tool is the department review.

The analyses contained in the report of the AVA Board and of the University Assessment Commission represent important moments of reflection and synthesis.

#### Department Review

The department Review (*Department Review Form*) must be drafted by the Academic Committee and consists of an analysis of the Scientific Project focused on the assessment of the implementation of the planned objectives, on the actions necessary to continue to carry out the activities and on the defined organization.

There are two review moments: in the middle and at the end of the three-year period. In the middle of the three-year period, the Academic Committee proceeds with a first self-assessment of the project based on the indicators defined during the design and planning phase. If there are any critical issues that could hinder the achievement of the defined objectives or critical issues that are not related to the progress of the objectives or problems with respect to the department organization, the Academic Committee provides, in this document, possible improvement actions.

At the end of the three-year period, the review is also preparatory to the drafting of the new Scientific project.

The review document, prepared by the Academic Committee with the support of the department QA Reference person and the AVA Board, is approved by the Department Board and submitted to the Research Committee, that expresses its opinion, and to the Academic Senate for its approval.

DOCUMENT	<b>Department Review</b>
OBJECT	Drafting and approval of Department Review
RESPONSIBILITY	Academic Committee
SUPPORT	QA Reference person of Department AVA Board
RECIPIENTS	University Bodies, NdV, PAVA
PERIOD	in the middle and at the end of the three-year period related to the Scientific Project
STEPS	September: drafting of the department review
	October: approval by the Department Board



	November: opinion of the Research Committee and approval of the Academic Senate
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#### AVA Board Report

Every year, in July, the Board prepares a report on the activities carried out and on the implementation of internal Quality Assurance. The report is sent to the Rector's Delegates and to the University Assessment Commission; it can be seen as an important moment of analysis, synthesis and monitoring of the planned improvement actions, provided by the Board.

<b>Annual report of AVA Board</b>	
OBJECT	Drafting of annual report of AVA Board
RESPONSIBILITY	AVA Board
SUPPORT	-
RECIPIENTS	Rector's Delegate for Education, Research and Third Mission, University Assessment Commission
PERIOD	Every year
STEPS	July: Drafting of annual report by AVA Board
	July/September: AVA Board sends the Report to the Rector's Delegate for Education, Research and Third Mission and to the University Assessment Commission

#### Audits

The NdV provides rotation of evaluations, once every five years, the functioning of the Departments through the analysis of the results using the hearings during which it assesses the functioning of the AQ at the level of the Departments and the University.

Every year the NdV draws up a Report according to the Guidelines issued by the ANVUR, in which the results obtained after audit are shown.

#### Single Annual Report of Research and Third Mission (SUA-RD and SUA-TM)

The Single Annual Report of Research and Third Mission is a regular exercise planned by ANVUR, currently not yet fully operational, in which the University and Departments state their objectives, resources and results of research and Third Mission. This form is a self-assessment tool (objective/result analysis) in which the University and the Departments state their objectives, resources and results of research and Third Mission.

DOCUMENT	<b>SUA RD sheet</b>
OBJECT	Drafting of SUA RD sheet
RESPONSIBILITY	Departments
SUPPORT	QA Reference person of Department AVA Board
RECIPIENTS	ANVUR



PERIOD	On ANVUR-MIUR indications
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DOCUMENT	<b>SUA TM sheet</b>
OBJECT	Drafting of SUA TM sheet
RESPONSIBILITY	Departments
SUPPORT	QA Reference person of Department AVA Board
RECIPIENTS	ANVUR
PERIOD	On ANVUR-MIUR indications

### 3 Communication in Quality Assurance of Research and Third Mission

The Quality Assurance of Research and Third Mission is based on a continuous training/information activity of all the players involved.

The AVA Board suggests the need for training/information on issues concerning the quality of Research and Third Mission for professors and for the technical-administrative staff, drawing inspiration from the review of Departments, in collaboration with Division HR & Organizational Development.

The AVA Board is organized in order to share information and activities through regular documented meetings, carried out by it and with the different players involved in the University's QA.

In addition, a contact point with QA Reference persons and Department staff is available, either by phone or through a dedicated e-mail address [presidioava@polimi.it](mailto:presidioava@polimi.it).

The AVA Board also ensures the exchange of information with the University Assessment Commission and the ANVUR.

Furthermore, the Quality Assurance is based on the definition of guidelines, and related documentation, which establish the minimum requirements to be implemented in order to guarantee the effectiveness of the QA, allowing the reproducibility and transferability of the information and practices to be followed.

The main documents, in addition to the Quality Policy and this guideline, are:

- Guideline for preparation of the Review Report
- Department Review Model.

The University Communication Service, in collaboration with AVA Board, manages a shared space on the intranet showing a brief description of the QA system, as well as the documentation useful to the players involved.

The intranet section dedicated to the QA for Research and Third Mission is:

<http://documentazione.intranet.polimi.it/come-fare-per/ricerca/assicurazione-qualita-della-ricerca/>