

# Supporting System Accreditation through a University Wide Quality Management Dashboard

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PDCA, Quality Instrument, Quality Management, Reporting, SharePoint, Web application

## 1. ABSTRACT

Since 2008, RWTH Aachen has committed itself to a guided, strategic development process to expand quality assurance in teaching. In its institutional strategy Excellent Teaching and in the Teaching Strategy funded by the federal-state program, RWTH set the particular goal of further developing quality assurance in studies and teaching. Additionally to these strategic goals RWTH is also concerned to meet the requirements posed by the Bologna Process.

In order to support the quality management process and system accreditation, RWTH established a quality management software, the data cockpit. Data cockpit is a SharePoint based web application that enables involved parties to maintain this continuous improvement process by setting quality goals and evaluating key performance indicators (KPIs) based on aggregated data from various existing source systems, as well as defining and tracing action measures and generating evaluation reports for external audits and follow up evaluations in the cycle.

## 2. SYSTEM ACCREDITATION PROCESS

RWTH Aachen's dedication to good teaching has been confirmed by its successful performance in competitions. One common factor is the understanding that qualitative, excellent teaching should be a part of a high-performing university's self-image. The quality of teaching, however, must be answered individually in each course of study. Hence, quality assurance makes a significant contribution to achieve this goal. It systematically collects feedback from persons involved, makes this feedback available to responsible parties, students, and interested public, and promotes necessary measures. Processes in studies and teaching are transparently defined for all involved parties.

Furthermore RWTH's understanding of good teaching is shaped by the work of all those involved in studies and teaching. This is supported by Teaching Quality Objectives, which RWTH Aachen developed. A quality management system has been developed based on these goals in a process that involves all of the faculties and other involved groups. RWTH Aachen uses the PDCA cycle to shape these processes:

- **Plan:** Determine quality goals
- **Do:** Select and implement suitable measures and processes
- **Check:** Measure results and effects using QM instruments
- **Act:** Develop and implement recommendations for action

In order to create a sound data base for our evaluation system, RWTH is using controlling data from the University's statistics department and aggregated data from the campus management system. Moreover, RWTH has established several quality assurance instruments to cover the entire student life cycle, as shown in Figure 1:

- Course of Study Survey
- Module and Examination Survey
- Graduate Survey

- First-Year Student Survey
- Student Survey

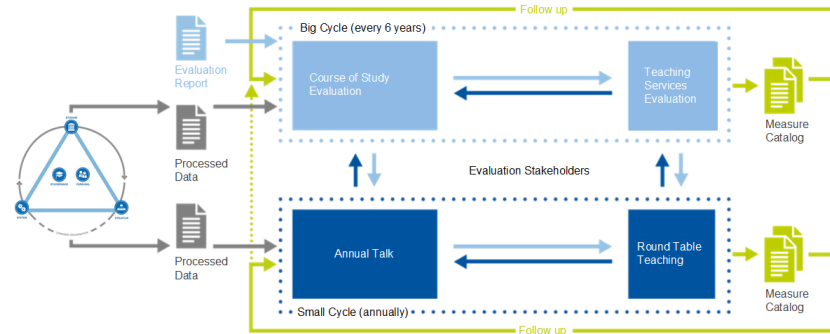


Figure 1: Quality management process of RWTH Aachen University

### 3. DATA COCKPIT: QUALITY MANAGEMENT DASHBOARD

The data cockpit is a web application that supports the workflows within the quality management system. Therefore it aggregates report data from various source systems as shown in Figure 2.

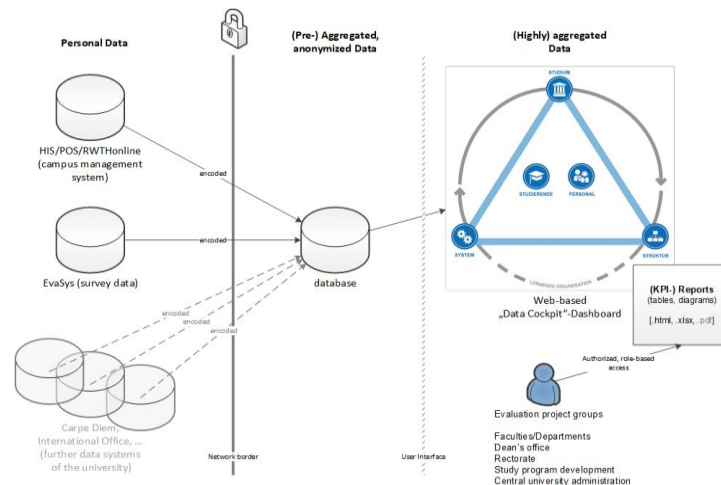


Figure 2: Aggregation levels of the quality management dashboard

The original, often personal, data remains in the protected source systems of the source systems. Communication with these systems takes place exclusively via encrypted web services and HTTPS-protected connections (network border).

The relevant data for the individual reports are aggregated on the data cockpit database and only stored anonymously for few reports in which case-related data is required to support the multiple layers of parameterisation. From this data, it is not possible to draw conclusions about individual persons without additional information from the source systems themselves. Nevertheless, direct access to this database is only possible for administrators and users of the quality management system have only access to specific and highly aggregated reports via the data cockpit web application.

Access to the application is controlled via the university wide identity management system and is only available to authorized users. Users thus only have access to specific reports concerning their involvement in respective processes restricted by group memberships.

The reports made available are predefined evaluations which can additionally be restricted to specific study programmes, semesters, nationalities and student groups via parameterisation. The exact contents are documented in key figure profiles. Based on these reports and KPIs users can use data cockpit to set and trace their quality goals with their stakeholders.

#### 4. AUTHORS' BIOGRAPHIES



**Uta Christoph** is deputy team lead of the group “Process and Application Development for Teaching” at the IT Center of RWTH Aachen University since 2018. She has worked at RWTH Aachen University as Project Manager and Software Developer since 2014. From 2012 to 2014 she was an international consultant for airport and cargo process optimization with Inform GmbH. Her work is now focused on the IT support of the quality management and accreditation process of RWTH Aachen University.



**Marius Politze** is head of the group “Process and Application Development for Research” at the IT Center of RWTH Aachen University. His own research is focused on service oriented architectures supporting university processes. He received his M.Sc. cum laude in Artificial Intelligence from Maastricht University in 2012. In 2011 he finished his B.Sc. studies in Scientific Programming at FH Aachen University of Applied Sciences. From 2008 until 2011 he worked at IT Center as a software developer and later as a teacher for scripting and programming languages.



**Bernd Decker** is deputy head of division of IT process support team at IT Center RWTH Aachen University since 2011. From 2006 to 2009 he worked at IT Center as Software Developer and since 2009 as lead of the development group. His work is focused on IT solutions for processes in the field of E-Learning, E-Services and campus management systems.