



Accreditation of professional statisticians in the European Union

To FenStatS board meeting, Bamberg October 17, 2018.

The committee for accreditation statistician is presenting the following proposal. The Committee has consisted of:

- Magnus Pettersson, chair, Sweden
- Arne Bathke, Austria
- Paul Koopman, The Netherlands
- Sebastien Marque, France
- Luigi Pieri, Italy
- Dominik Rozkrut, Poland
- Gerardo Sanz Sais, Spain
- Maria Eduarda Silva, Portugal

We are herby delivering our final report for FenStatS.

We recommend that the following steps are taken:

1. A formal standard for accreditation is formulated. AmStat guidelines can be used as a starting point
2. A webbased application system is either created or purchased
3. The national associations are invited to participate

We believe that the system can be started early 2019.

1 Summary

The committee has evaluated how to implement a EU system for accreditation of professional statisticians. The results are summarized as follows:

- The advantages of an accreditation system outweigh the disadvantages
- Advantages includes:
 - A protection of the title “statistician”
 - Increased quality and requirements to statistical works
 - Accountability for ethical standards and quality
 - A professional career ladder for professional statisticians
 - Transferability over countries and branches of businesses
 - Stressing important skills and factors for a working statistician
- Disadvantages include
 - Increased bureaucracy and costs for the individual
 - No guarantee that it improves quality
 - Professionals lacking all exact criteria will be excluded
- Systems for accreditation are already working in UK and USA and in other countries
- Criteria are based on:
 - Academical education, MSc
 - Five years work experience
 - Professional development
 - Pedagogical skills
 - Adherence to any relevant standard and ethical code of conduct
 - Membership in national statistical association
- FenStatS sets a standard for
 - The accreditation criteria
 - The accreditation process
- The national associations participating have to comply with criteria and process, once approved, but they are part of the discussions leading to these
- FenStatS administrates applications and registry
- National associations join the standard and approve/reject applications within their jurisdiction
- FenStatS audits the national association process
- Costs for the process are covered by fees collected nationally
 - Approximate application fee 100-200 EUR
 - Approximate annual fee 10 EUR
- Re-accreditation every 5th year

We recommend that FenStatS board initiate the process of creating standards and web applications, with the goal of accepting the first application Q2 2019.

2 Criteria

The committee propose the following criteria.

They are based on the criteria set by American Statistical Association and Royal Statistical Society. Therefore, we assume that they will be mutually recognized by FenStatS, Amstat and RSS. According to AmStat the criteria have been easy to apply and use practically.

All criteria shall be read with a "... or any other merit that is deemed equivalent".

2.1 A – Academic degree

The applicant shall have an MSc according to the bologna criteria – majoring in statistics or equivalent.

The MSc is today considered the main academic level that is required to have the necessary knowledge and methods to apply. The MSc is also well standardized within the Bologna process.

The degree shall be in a relevant major subject such as "Statistics", "Biostatistics", "Bioinformatics", "Mathematical statistics" or equivalent. Pure "Mathematics" or "Data science" needs to be evaluated further, and the committee recommends that the examination reports will be evaluated individually.

The committee recommends that any university, college or similar that is accredited by a national body or authority shall be accepted. We do not recommend that the accreditation shall be used to evaluate universities parallel to ordinary national authorities.

Submit course transcripts, diplomas etc.

2.2 B – Working experience

The applicant shall have five years of relevant working experience.

The committee is following Amstat and RSS at this point. We also believe this to be a long enough experience to work on ones own and take own responsibility over ones work.

Discussions have been over what kind of working experience shall count. According to AmStat this was also under discussion when PStat was constructed, but it was assumed that it would be practical to solve once the system was applied. There are certain questions whether, for example, programming in R and SAS is automatically qualifying, but the committee recommend that this is left to the application phase.

Part time work shall be counted as actual work time.

Submit a CV.

2.3 C – Professional development

The applicants shall during the period after the education have an ongoing professional development in relevant fields (not necessary only in statistics).

This means that the applicant shall show that he/she has developed his/her professional skills after graduation. Any merit that can be useful when working professionally counts. It is not a criteria to be seen as “a certain number of ticks is enough”, but more as a way of pointing out the importance of professional development.

According to AmStat, more or less anything can count:

- Additional academic training (any subject)
- Other training (leadership, quality, economics etc)
- Self studies
- Professional activities, like scientific presentation, mentoring, etc
- Assignments, including non-professional that can improve the ability as statistician

Submit a list (if not in the CV) and certifications etc

2.4 D – Communication and pedagogical skills

The applicant shall have documented skills in communication of statistical concepts.

This means that the applicant shall in some way show that he/she has communicated results and concepts in a pedagogical way. Statisticians are normally working as one expert among other specialists and therefore it is important that communication and pedagogy are prioritized.

Submit a couple of examples and letter of recommendation.

2.5 E – Compliance to relevant standards

The applicant shall certify knowledge of relevant ethical standards and adhere to them.

There is no ethical guideline for FenStatS, but several national standards are written. Apart from this there are ethical guidelines only applicable to specific applications of statistics. The requirements point out that any relevant standard or ethical code shall be known and followed.

Confirmation of criteria.

2.6 Membership

The applicant shall be a member of a FenStatS member organization.

The accreditation is directly connected to the membership in a national organization.

Confirmation of criteria.

3 Application process

The committee has studied the application process of AmStat. One committee member is also PStat® accredited and can thereby give personal accounts to the process.

Our proposal is that an interested applicant go through the following steps:

1. File an application with a national association which is member of FenStatS.
2. Submission of documentation to the application.
3. Fee is paid to national organization.
4. A fixed number of times (2) a national committee is set up.
5. National committee goes through the applications
 - a. Accepted directly
 - b. Accepted after additional documentation
 - c. Rejected
6. A successful applicant is registered in FenStatS accreditation register
7. A certification is sent to the applicant, sign by National organization and FenStatS

3.1 Administrative system

We recommend that the full process is handled electronically through a system administrated by FenStatS.

AmStat has created a system that handles most administrative parts over the Internet. The committee believes that such a system easily can be created by FenStatS. It is also possible to use a standard commercially available system (one has been demonstrated to us during the process).

3.2 Documentation for application

The following documentation (if applicable) shall be attached to the application:

- Cover letter
- CV
- ID-card or other proof of identity
- Education transcript(s)
- Proof of examination
- Detailed description of development actions taken
- Two references
- Two examples of written reports, presentations etc
- Receipt of payment of application fee
- List of standards applicable
- Statement to follow standard and ethical codes

The process can be fully webbased.

4 Follow up, audit and disciplinary measures

In order to keep the system working and recognized we recommend that the following steps are included in the standard:

4.1 Follow up accreditation

Each accreditation is re-evaluated regularly, we recommend every 5th year. The re-evaluation only needs to include new topics and a reaffirmation of the adherence to standards.

4.2 Evaluation of national associations

Annually, the applications from each country are audited (through a random sample) in order to keep a common level of standards of the criteria.

Applicants that are rejected by a national association can appeal to FenStatS accreditation committee.

4.3 Disciplinary issues

The FenStatS accreditation committee shall investigate complaints against accredited statisticians and have the right to revoke accreditation.

5 International comparison

There are already systems for accreditation of statisticians in some countries and regions.

The systems in USA, United Kingdom and Canada have been under consideration when this report is authored - All three countries have systems in effect. We have had direct contact with Ron Wasserstein at AmStat for consultation.

American Statistical Association (AmStat) have an accreditation membership (PStat® - Professional statistician), with certain criteria to meet. It is also required that PStat are members of Amstat. The application process is transparent and electronical. All documentation can be found on www.amstat.org.

Royal Statistical Society (RSS) has an accreditation membership (CStat – Chartered Statistician), with certain criteria to meet. The application process is not as open as AmStat system, but is fairly similar. One difference is that RSS also evaluate the courses included in the academic degrees and thereby indirectly evaluate the university programs.

Both AmStat and RSS have two levels of accreditation where graduate statistician can get a preliminary accreditation only holding an academic degree. This is considered as a step towards full accreditation. In Italy (and earlier in Sweden) an academic level is (was) a requirement for joining the national organization.

Other systems are working (in different forms) in Canada, The Netherlands, Italy and Hong-Kong. There are also systems limited to certain kinds of subgroups of statisticians.

The committee have had the goal that the FenStatS system shall be mutually recognizable between, UK, USA and other relevant organisations.

6 Organization

The following groups need to be formed:

6.1 FenStatS board

Is responsible for the standards and the auditing of the system. FenStatS is also owner of the accreditation standard and the system running the accreditation.

The board appoints the FenStats Accreditation Committee. On proposals of Committee, the Board sets up the accreditation standards and criteria

6.2 FenStatS accreditation committee

Consists of a variety of representation from national organizations. The committee collects and evaluates the applications from national associations. It handles appeals, auditing and disciplinary actions.

6.3 National associations

Reads and accepts/rejects applications. Proposes members of the accreditation committee.

7 Costs and fees

FenStatS invest in the webbased application system. The costs are reimbursed through the application fees.

National associations invoice the application and annual fees. Application fees are transferred to FenStats.

