



# ACTUARIAL ASSOCIATION OF EUROPE

## The Professional Judgment Commentary Paper

Siegbert Baldauf

Xavier Gomez

11 February 2020

# Professional judgment

The AAE has recently published a

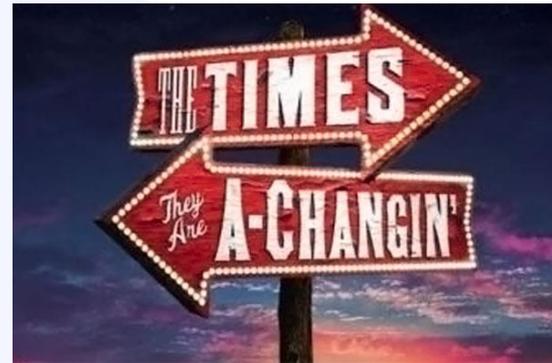
## **Commentary paper on the application of professional judgment by actuaries**

### **Objective:**

- Identifying the **distinguishing features** of actuarial professional judgment.
- Providing a short **self-assessment questionnaire** to check the consistency of professional judgment applied by the actuary with principles laid down in AAE's Code of Conduct

# Current challenges for actuaries

- a) Regulator, Supervisor: Solvency II, IDD, IFRS17, IORP2, ...
- b) Competition: Insurtechs, Cost pressure, ...
- c) Market: Low interest rate environment, ESG issues
- d) Demography: Longevity, long-term care, ...
- e) "Fourth industrial revolution":
  - Digitalisation
  - Economy 4.0
  - Big Data



These challenges will affect or even change the actuarial work

# Actuarial work has developed over time -

Changes sparked by progress in science and technic

## **17<sup>th</sup> century: Actuary of the 1<sup>st</sup> kind**

Life actuaries methods involve deterministic calculation

## **20<sup>th</sup> century: Actuary of the 2<sup>nd</sup> kind**

Non-life actuaries: Probabilistic methods to assess risk

## **1987 Actuary of the 3<sup>rd</sup> kind (Bühlmann)**

Investment side considered, stochastic processes in actuarial calculation

## **2006 Actuary of the 4<sup>th</sup> kind (Embrechts)**

Risk management, all aspects of risk in insurance

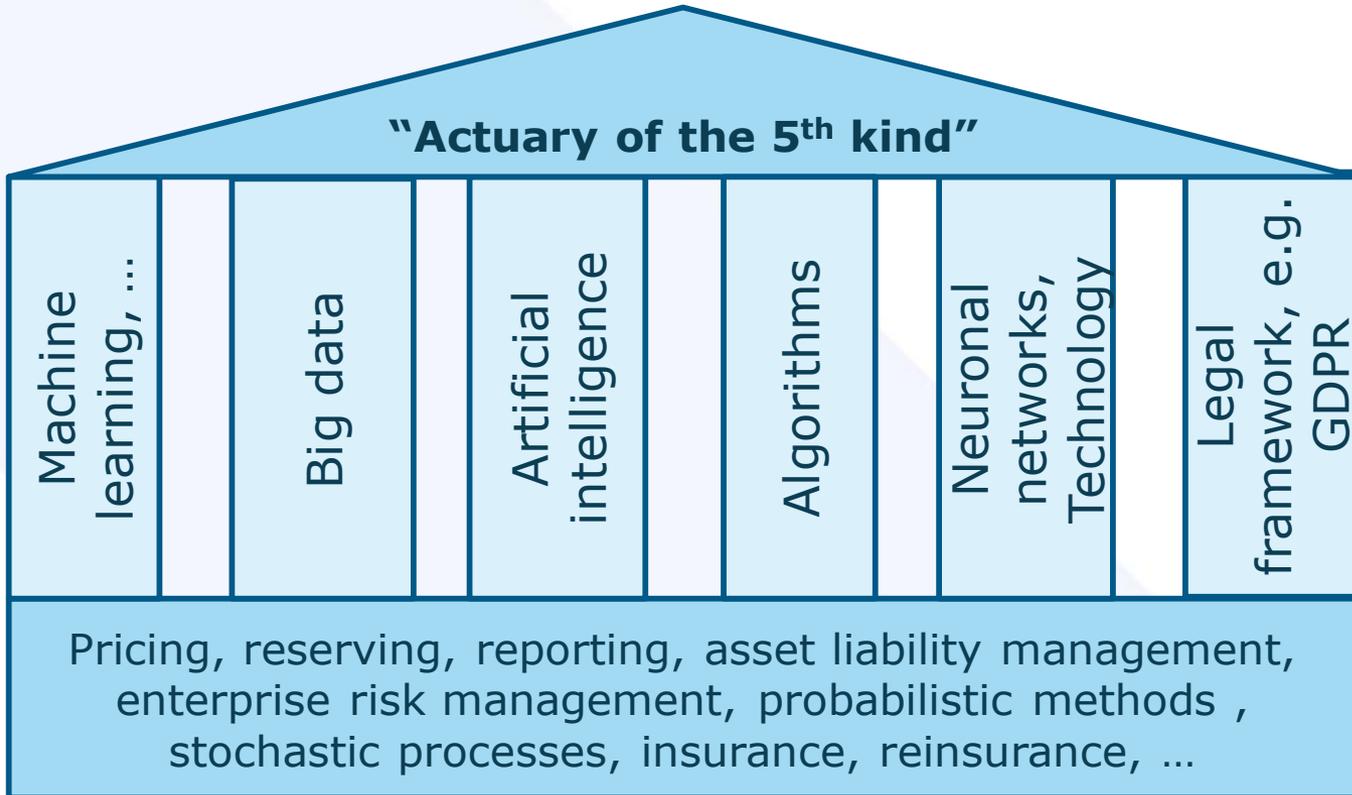
---

## **2016 Actuary of the 5<sup>th</sup> kind (Chan & Devlin)**

Big Data working Party: Big data, Analytics & Unstructured data

... by including new technics and tasks

**Code of professional conduct**  
need for professional judgment



# Challenges for the actuarial profession

e.g. UK: Professional oversight board (May 2009) on

The actuarial profession's progress and priorities in regulating its members

“However, we do not accept the argument of some that the professional requirements for actuaries who allow their work to be presented in a professional actuarial capacity should be no greater than those for non-actuaries who do the same work.

By presenting their work in this way, actuaries are making a statement about the professional standards of competence and integrity that apply to their work, **on which the public is entitled to rely.**

**There is a significant risk to the reputation of the Profession and its members, as well as to the public interest, if those standards are not met.”**

# Mitigating the reputational risk

- What makes the professional judgment given by an actuary different from the judgment of an expert?
- What is the additional benefit resulting from the professional judgment of an actuary?
- What are the indispensable requirements?
- How can an actuary comply with these requirements?

# Actuarial profession

The distinguishing feature of a profession that sets it apart from a trade, a craft, a guild or a syndicate is the **overriding interest** of the individual professional in the **public well-being**.

According to the **International Actuarial Association – IAA**

**Professionalism**, for the actuarial profession, means

- the application of **specialist actuarial knowledge and expertise**;
- the demonstration of **ethical behaviour**, especially in doing actuarial work; and
- the actuary's **accountability** to a professional actuarial association or similar professional oversight organisation.

# AAE: Commentary paper on actuarial judgment

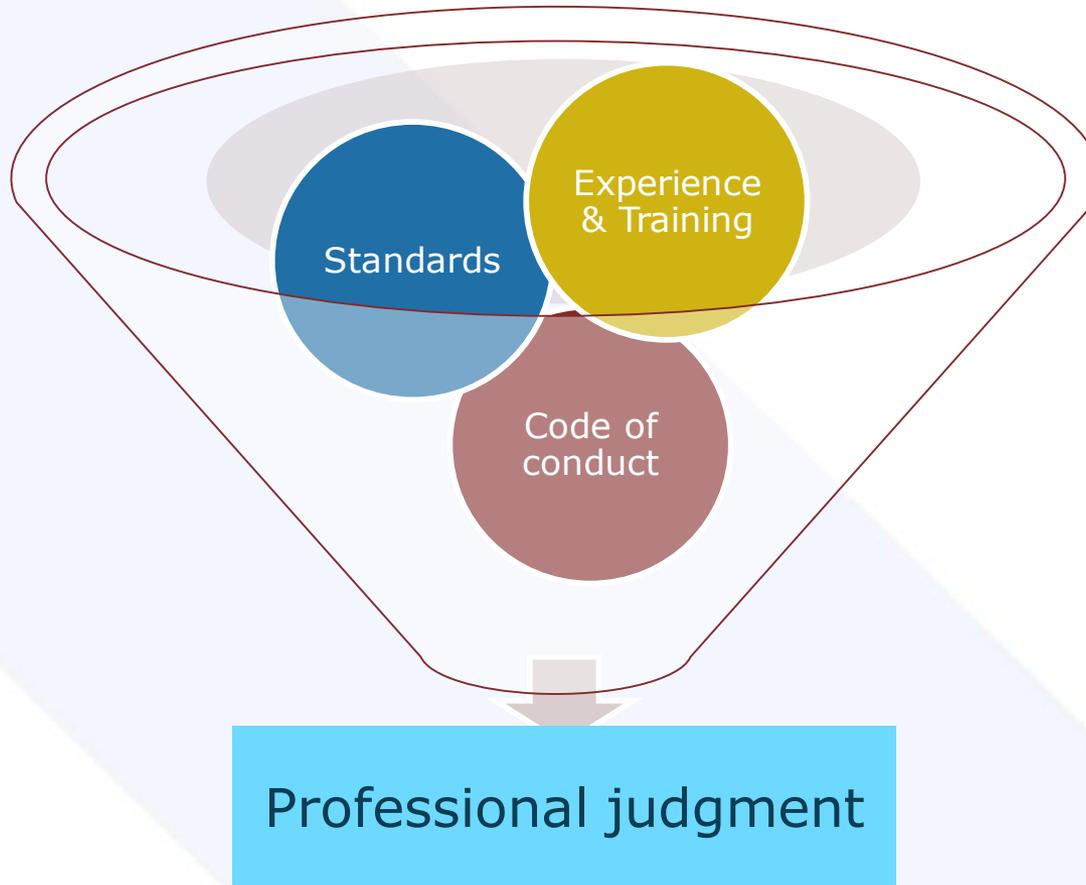
The following definition of an **actuary** is used in the paper

**An actuary is an individual fully qualified member of one of the full member associations of the AAE.**

- Fully qualified actuaries are bound by the **professionalism standards** of their member organisation.
- These standards need to be consistent with the professionalism standards of the AAE.

A fully qualified actuary has completed, at a minimum, all aspects of the AAE **core education syllabus!**

# Professional judgment: Definition



Professional judgment (Pj) is the judgment of the actuary, based on actuarial (or other relevant) training and experience, bound by the Standards and Code of Conduct of the profession.

# Concerning Code of Conduct

The AAE adopted its

## **Code of Professional Conduct**

on 22<sup>nd</sup> September 2017. It will become effective as of 1<sup>st</sup> January 2021.

It contains the

Common Principles of Ethical and Professional Behaviour accepted by the Actuarial Associations affiliated to the AAE

### Purpose:

- Providing guidance on the **behaviours** expected of actuaries when performing professional services;
- Giving intended users of those services confidence that they are carried out **professionally** and with **due care**.

# Concerning standards – ESAP1

## **ESAP1: European standard of actuarial practice 1**

### **Purpose**

*This ESAP provides guidance to actuaries when performing actuarial services to give intended users confidence that*

- *actuarial services are carried out professionally and with due care;*
- *the results are relevant to their needs, are presented clearly and understandably, and are complete; and*
- *the assumptions and methodology (including, but not limited to, models and modelling techniques) used are disclosed appropriately*

### **Reasonable Judgment**

The actuary should exercise reasonable judgment in applying this ESAP.

# Concerning experience and training

Education of an actuary

- 1) Basic education**, as laid down in the **core syllabus**.
- 2) Continuous professional development (CPD)** to maintain and further develop skills and knowledge at an appropriate level. Requirements are developed and adopted by actuarial associations.

# Becoming an actuary – basic education

Core syllabus for actuarial training adapted to reflect changes

## **AAE: CORE SYLLABUS FOR ACTUARIAL TRAINING IN EUROPE October 2011**

1. Mathematics
2. Probability and Mathematical Statistics
3. Stochastic Processes and Modelling
4. Economics
5. Accounting and Financial Reports
6. Legislation
7. Financial Mathematics
8. Multiple state modelling
9. Contingencies
10. Risk mathematics
11. Finance and financial markets
12. Quantitative Risk Management and Solvency
13. Actuarial Enterprise Risk Management
14. Professionalism

## **AAE: CORE SYLLABUS FOR ACTUARIAL TRAINING IN EUROPE OCTOBER 2019**

1. Statistics
2. Economics
3. Finance
4. Financial systems
5. Assets
6. Data and systems
7. Actuarial models
8. Actuarial risk management
9. Personal and actuarial professional practice

# Being an actuary

Continuous professional development indispensable!

The aims of CPD are:

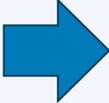
- to contribute towards demonstrating actuaries are “**fit & proper**” over time in the areas in which they practice to provide relevant and high-quality actuarial services and advice.
- to support actuaries to take on new roles and to move to different areas of practice, including new ones arising from expansion of the profession.
- to ensure that actuaries’ competences are up to date and relevant for their roles.

## CPD therefore is

- a key element to support **actuaries’ lifelong employability**.
- one important way to prevent professional conduct failures which could be a **risk** for the **recognition of the profession**.

# Professional Judgment: Questionnaire

After identifying the **distinguishing features** of actuarial professional judgment, the **Commentary Paper** provides a short **self-assessment questionnaire**

- to check the consistency of professional judgment applied by the actuary with principles laid down in **AAE's Code of Conduct**
- to help actuaries apply their professional judgment on several issues related to their **day-to-day tasks**:
  - Actuary's **duties** when making **Pj**  **Code of Conduct**
  - Applying **Pj** to down-to-earth items, i.e., **data; methods and models; assumptions in models; conclusions in assignments.**

# Code of Professional Conduct: 5 Principles

## **Code of Professional Conduct**

published by the AAE in

**2017**

becoming effective for Full Member Associations of the AAE on

**1 January**

**2021.**

A. Integrity

B. Competence and Care

C. Compliance

D. Impartiality

E. Communication

# Compliance with Code of Conduct

Regarding the CoC-Principles:

- All *actuaries* are expected to comply with Principle ***Integrity*** in the performance of their work and in other contexts **where their conduct could reasonably be considered to reflect on the actuarial profession.**
- All *actuaries* are expected to comply with Principles ***Competence and Care, Compliance, Impartiality and Communication*** in relation to ***professional services*** that they perform (whether on a paid or unpaid basis).

*Actuaries* are expected to **observe the spirit and intent of the Code**, rather than to interpret it only in a purely literal way.

# Code of Professional Conduct: Principle A.

An actuary must act honestly and with the highest standards of integrity.

## A. Integrity

A1 An *actuary* must perform work with integrity, skill and care.

A2 An *actuary* should not act in a manner that is likely to damage the reputation of the actuarial profession, whether in the performance of work or in other contexts in which conduct could reasonably be considered to reflect on the actuarial profession.

# Code of Professional Conduct: Principle A.

An actuary must act honestly and with the highest standards of integrity.

## A. Integrity

Proposed questions to assess compliance with the principle.

- Can I devote **enough time and resources** to perform the assignment?
- May the assignment **contravene my ethical and/or moral principles**?

# Code of Professional Conduct: Principle B.

An actuary must perform professional services competently and with care

## B. Competence and care

An *actuary* must perform specific *professional services* only if:

- the *actuary* is competent and appropriately experienced to do so, or
- the *actuary* is acting on the advice of an individual who has the appropriate level of relevant knowledge and skill and the *principal* is aware that this is the case, or
- the *actuary* is acting under the direct supervision of another person who is taking professional responsibility for the work.

# Code of Professional Conduct: Principle B.

An actuary  
must perform  
professional  
services  
competently  
and with care

## B. Competence and care

Proposed question to assess compliance with the principle.

- Do I enjoy the **knowledge** and **experience** required to deal with the issues involved in the assignment?

# Code of Professional Conduct: Principle C.

## C. Compliance

An actuary must comply with all relevant legal, regulatory and professional requirements

An *actuary* must act in a manner that fulfils the actuarial profession's responsibility to the public by observing applicable technical and professional standards.

An *actuary* must take into account any relevant codes, standards, guidance notes and similar documents formally issued or endorsed by the actuarial association(s) of which the *actuary* is a member, having regard to their scope and status (for example mandatory, recommended practice, etc).

# Code of Professional Conduct: Principle C.

An actuary must comply with all relevant legal, regulatory and professional requirements

## C. Compliance

Proposed question to assess compliance with the principle.

- Does the completion of the assignment **contravene** any **regulation** or **professional standard**?

# Code of Professional Conduct: Principle D.

## D. Impartiality.

An actuary must not allow bias, conflict of interest or the undue influence of others to override professional judgment

An *actuary* must not perform *professional services* involving an **actual** or **potential conflict of interest** or involving **bias** or perceived bias on the part of the *actuary*, unless the *actuary's* ability to act in an impartial manner is unimpaired and there has been full disclosure to the *principal* of the actual or potential conflict or bias.

# Code of Professional Conduct: Principle D.

## D. Impartiality.

An actuary must not allow bias, conflict of interest or the undue influence of others to override professional judgment

Proposed questions to assess compliance with the principle.

- Can I avoid **undue pressure** from any involved party to influence on the result of the assignment?
- Can I guarantee that the way **compensation for the assignment** is structured avoids bias in my judgment?
- Do I incur in any **conflict of interest** when accepting the assignment, namely, is my status or remuneration depending on the outcome of this assignment?

# Code of Professional Conduct: Principle E.

## E. Communication

An actuary must communicate in an appropriate manner and meet all applicable reporting standards

An *actuary* must **communicate** the results of ***professional services*** in a timely manner and in a style and format that is **appropriate** to the particular circumstances, having regard to the need to convey the implications of any analysis and advice included in the communication in a manner that is **comprehensible** to the *intended user(s)*

# Code of Professional Conduct: Principle E.

## E. Communication

An actuary must communicate in an appropriate manner and meet all applicable reporting standards

Proposed question to assess compliance with the principle

- Do I feel confident as to communicate **efficiently and clearly** the results of the assignment under any circumstance or in any forum (say, in front of my principal, an individual customer, a board of directors, a court, a press conference)?

# Actuaries' duties when making Pj

- The **Questionnaire** above provides assistance to assess if **Pj** may become **impaired** when performing the assignment.
- In case any answer reveals **serious setbacks** for the actuary to achieve an **integral, competent, compliant, impartial** and **appropriately communicated** professional judgment, several courses of action can be considered
  - **Expressing clearly** the factors that may hinder Pj;
  - **Communicating** to involved parties **the setbacks affecting Pj**;
  - **Quitting the assignment** in case the setbacks seriously **contravene** any of the CoC Principles.

# Applying Pj to down-to-earth items

- Actuaries are mainly focused on forecasting future performance, using past and current events as input data, and considering potential future scenarios.
- Hence, it is of utmost importance to apply appropriate Pj in all the steps involved in an assignment,
  - **Choosing data**
  - **Dealing with missing or incomplete data;**
  - **Choosing a model for the data;**
  - **Setting the key assumptions for the model;**
  - **Interpreting the model outcome.**

# Choosing data for the assignment

- Assessing **data sources**.
  - *Are data sources for the assignment relevant and reliable?*
- Assessing **data completion**.
  - *Do I have at my disposal any proxies that could reasonably substitute for any missing data?*
- Assessing **data consistency**.
  - *Have I proceeded to check internal coherence in data used for each chapter of the assignment?*
- Assessing **data disclosure**.
  - *Are any setbacks in data quality, such as incompleteness or the use of proxies, appropriately disclosed?*

# Dealing with missing or incomplete data

- **Missing data.**

- *Can I draft the assignment without the missing data?*
- *In case I decide to draft the assignment even though some data are missing, can I reasonably assure the quality of the outcome?*

- **Incomplete data** (i.e. data not available for the desired period but that can be estimated from other available data)

- *Can I reasonably estimate incomplete data from available data (e.g. monthly data from annual data)?*
- *Can I describe in detail the model used for estimating the incomplete data?*

# Choosing a model for the data

The specific questions for this section address **model risk**

- Inappropriate **methodology**
  - *Is the chosen model fit for purpose?*
- Too much **complexity** with no added value
  - *Is the model set up in a way to avoid unnecessary complexity?*
- Model knowledge concentrated on **key people** / lack of suitable **documentation**
  - *Are the model and procedures **documented** to properly mitigate **dependency** on key people?*

# Setting the key assumptions for the model

**Assumptions** arise immediately when choosing either the methodology or the variables for the model. The actuary must check **consistency** in assumptions regarding these choices.

- Checking **assumptions on variables**

- *Do I have enough knowledge on sources, data quality, sample size, and any limiting factors for the choice of variables?*

- Checking **assumptions on methodology**

- *Are methodology choices based on actuarial independent view and best practices?*

- **Back testing**

- *Are the process and methodology robust and consistent enough to assure the relevance of the outcome and conclusions?*

# Interpreting the model outcome

Several aspects might be tested in relation to the outcome of the model before the assignment is delivered.

- **Relevance**

- *Do the results answer the questions asked by the sponsors of the assignment?*

- **Disclosure**

- *Are any caveats that may affect the conclusions appropriately disclosed?*

- **Testing**

- *Has an independent party with no vested interest checked the verisimilitude of the conclusions?*

# Summary

- The distinguishing features of **actuarial professional judgment** have been disclosed
- *Assistance in the form of a **self-assessment questionnaire** has been drafted to help actuaries apply their Pj in relation to*
  - *the duties set up by the Code of Professional Conduct;*
  - *the phases involved in completing an assignment.*
- If after completing the questionnaire **serious setbacks** have been identified that might affect **the conclusions** of the assignment, the actuary may consider several options
  - *Disclosing the setbacks;*
  - *Communicating the setbacks to the parties involved;*
  - *Quitting the assignment.*

# Some links

AAE: Commentary paper on Application of professional judgment by actuaries (January 2020)

<https://actuary.eu/wp-content/uploads/2020/01/Professional-judgement-FINAL.pdf>

AAE: CORE SYLLABUSFORACTUARIAL TRAINING IN EUROPE (2011)

[https://actuary.eu/wp-content/uploads/2017/08/CORE\\_SYLLABUS\\_Oct2011\\_final\\_AAE.pdf](https://actuary.eu/wp-content/uploads/2017/08/CORE_SYLLABUS_Oct2011_final_AAE.pdf)

AAE: CORE SYLLABUSFORACTUARIAL TRAINING IN EUROPE (2019)

[https://actuary.eu/wp-content/uploads/2019/10/2019-10-11\\_AAE-Core-Syllabus\\_complete\\_final.pdf](https://actuary.eu/wp-content/uploads/2019/10/2019-10-11_AAE-Core-Syllabus_complete_final.pdf)

AAE: Code of professional conduct

[https://actuary.eu/wp-content/uploads/2017/10/Code\\_of\\_Conduct\\_22092017\\_FINAL-1.pdf](https://actuary.eu/wp-content/uploads/2017/10/Code_of_Conduct_22092017_FINAL-1.pdf)

ESAP1: European standard of actuarial practice

[https://actuary.eu/documents/ESAP1\\_final\\_approved\\_031014.pdf](https://actuary.eu/documents/ESAP1_final_approved_031014.pdf)

IAA: Principles of professionalism

[https://www.actuaries.org/CTTEES\\_PROFESS/Papers/Professionalism\\_Guidelines/PG1\\_Principles\\_of\\_Professionalism\\_071\\_02017.pdf](https://www.actuaries.org/CTTEES_PROFESS/Papers/Professionalism_Guidelines/PG1_Principles_of_Professionalism_071_02017.pdf)

The actuarial profession's progress and priorities in regulating its members; Professional oversight board (May 2009)

<https://www.frc.org.uk/getattachment/c16d1a70-5525-4df1-8444-b30d0f116500/Report-on-AP-progress-in-regulating-its-members.pdf>