



AALBORG UNIVERSITY
DENMARK

PERFORMANCE AGREEMENT

Research and Innovation Indicator 2025

(goals for 2026)

Department of Mathematical Science

Agreement on the realisation of department strategies on
Collaboration, Visibility, and Openness (Part B)

Prioritised Goals for 2026

At a meeting on 5 January 2023, the Strategic Council for Research and Innovation approved the following three priority areas for realisation of the department's open science parameters. This prioritisation is in line with the goals presented in the [Agreement on Reforming Research Assessment](#) signed by Aalborg University:

AAU Research and Innovation Indicator (Part B):

- Collaboration
- Visibility
- Openness



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DENMARK

Caseworker:
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Date: [Date of letter]
Case No.: [Case No.]

Agreement on realisation of goals pertaining to the AAU Research and Innovation Indicator in 2026

DEPARTMENT

<Insert department name>

GOAL REALISATION

*GUIDE TO COMPLETING
THE RESEARCH AND INNOVATION INDICATOR PERFORMANCE AGREEMENT
(the section can be deleted when you submit the draft agreement)*

In this performance agreement, you must briefly describe the status of the area and how you expect the goals to be implemented at your department.

For AAU Research and Innovation Indicator (Part B), please provide a brief status of how far you have come within collaboration, visibility and openness in 2025. In addition, please describe how you will work with the three areas in the coming year, including which type of documentation you will use for the areas you choose to prioritize.

It is a requirement that all three areas are taken into consideration, however it is possible to choose to focus on one, two, or all three areas. You must, however, state the reasons for selecting/deselecting each of the three areas. At the same time, it is possible to focus on the same area for a period longer than one year to make allowance for the fact that research processes within publishing take time.

MONITORING OF RESEARCH AND INNOVATION INDICATOR GOALS

Heads of departments are responsible for the monitoring and reporting on status of progress and results that are presented to the dean's office annually. Likewise, approval of performance agreements for the AAU Research and Innovation Indicator (Part B) takes place in the dean's office. Deadline for approval is the end of December 2025.

Every year in June, the VBN-team in collaboration with AAU Innovation issues a report to the department management on the department's overall performance within the indicator's three areas: Collaboration, Visibility and Openness. The department report format contains overall figures for the department as well as more group-specific data.



PERFORMANCE AGREEMENT FOR RESEARCH AND INNOVATION INDICATOR

See this guide for examples of a completed performance agreement for the research and innovation indicator (Part B):

<https://doi.org/10.54337/aa524581597>

Collaboration

Current status:

Please provide a brief status of how far you have come within collaboration.

GOALS 2025

1. Internal Collaboration – In addition to the collaborations outlined for 2024, we will ensure continuous and close dialogue with our neighboring departments regarding service teaching in mathematics and the development of new mathematics courses, including topics such as AI and cryptology. The plan is for MATH to contribute to one or more AI Labs, linking research activities from other departments to the mathematical economics and statistics section as well as the mathematics section.

2. Internal and External Collaboration – Maritime research will officially launch in 2025 with the initiation of up to four PhD students and the European Study Group for Industry (ESGI) in mathematics, which will be held at AAU in Aalborg for the first time—potentially integrated with a new PhD course. This collaboration is conducted closely with DTU Compute, and for the department, increased engagement is expected with companies such as MAN, Spar Nord, Centrica, and Novo Nordisk (biostatistics).

3. Sabbaticals - The department is considering the introduction of sabbaticals to strengthen international collaboration and research, with the structure of sabbaticals currently under review.

STATUS 2025

1. Internal Collaboration

In 2025, IMF has focused strongly on internal collaborations within AAU. Together with the Department of Computer Science, we have developed a new continuing education program: *Master in Applied Statistics*, and we have advanced *First Math* to version 3. Unfortunately, the department did not succeed in establishing an AI Lab in 2025, but the work will continue moving forward.

2. Internal and External Collaboration

In 2025, IMF initiated a number of projects in the maritime domain:

- PhD on the use of spatial statistics to study piracy
- PhD on cavitation and noise phenomena caused by ship propellers
- Postdoc on secure communication and coding for maritime applications

Additional industry collaborations have also been launched in partnership with the finance and energy sectors. In 2025, we successfully initiated four industrial PhD projects in collaboration with major companies (*Spar Nord*, *Norlys*, *Everllence*, *TICRA*).



In October 2025, we hosted European Study Group for Industry 190 in Aalborg in collaboration with DTU Compute, with 23 participants. The event focused on two problem statements within the maritime domain. Participation was accredited as a 2.5 ECTS PhD course for the attending PhD students.

Below is an overview of external, international collaboration on publications.

	2020	2021	2022	2023	2024
External, international collaboration (publications)	44	38	35	40	45

3. Sabbaticals

Unfortunately, it has not been possible to reduce the teaching load at the department, as recruitment of external researchers was unsuccessful in 2025. We are working actively to recruit staff, particularly for the Statistics and Mathematical Economics Section. At the same time, the department is striving to strengthen international collaboration through regular research visits by our staff to foreign institutions and by hosting international researchers in Aalborg. Several researchers have expressed interest in sabbaticals during "MUS-samtaler", and the department views this opportunity very positively.

ADDITIONAL INFORMATION ON COLLABORATION

- In the period 2020-2024, University of Copenhagen is the top academic collaborator followed by Aarhus University and Odense University Hospital.
- In the period 2020-2024, AAU Energy (30 publications) is the largest internal collaboration partner.
- In the period 2019-2023, Centrica Energy Trading A/S (3 publications) is the largest corporate collaboration partner.
- More impact is achieved with international collaboration when counted in Scopus. The research produced with international collaboration is cited 14% more than the world average. For instance, collaboration with Nagoya University achieve a FWCI of 2,53 compared to the department's average FWCI of 0,97.

Goals for 2026:

In 2026, IMF will focus on promoting cross-disciplinary collaboration at AAU within the maritime domain through the establishment of *AAU Blue* as a mission/platform.

IMF is currently undergoing a generational shift, which poses challenges for maintaining a strong international publication network. In 2026, we will work hard to sustain this collaboration despite the transition. This will be achieved through a combined strategy that includes attracting talented researchers at all career levels and reducing the average teaching load. Furthermore, we are confident that the many new PhD students at the department will contribute to an increase in research output.

We also aim to continue offering opportunities for periods of research immersion in the form of various types of sabbaticals. Sabbaticals will be supported by creating concrete possibilities through teaching planning and hiring to increase teaching capacity.

IMF has strong research competencies in both fundamental AI research and AI applications, which we will seek to leverage in relation to both internal and external collaborations.

Innovation goal: MAS will contribute to greater industry collaboration and innovation within companies. In addition, we see that former students subsequently start businesses, for example in energy trading.



We are also working to present students with opportunities and support for entrepreneurship during their studies.

Visibility

Current status:

Please provide a brief status of how far you have come within visibility.

GOAL 2025

1. The department is highly aware of the need to free up more time for research and funding activities for all VIPs—an issue emphasized by the research evaluation in F24.

- This will be achieved by reducing individual teaching loads, including reallocating certain courses to reading circles and discontinuing courses that consistently fail to meet a critical enrollment threshold.
- The department's improved financial situation for 2025 allows for the hiring of external teaching support in courses where it is deemed beneficial.

2. New Initiatives in 2025 with Expected Significant Visibility:

- The Danish National Research Foundation Center under Petar Popovski in Quantum Communication.
- The Orient's Fund grant in the maritime sector will officially launch in 2025.
 - These activities will involve maritime applications with significant overlap in several of the department's mathematical and statistical research environments.
 - There is strong anticipation that collaboration with Orient's Fund through this first major grant will lead to further initiatives supported by Orient's Fund.

3. Mentions (Press Coverage) and Online Visibility:

- Documentation of the aforementioned new activities (The Danish National Research Foundation + Orient's Fund) is expected to be reflected in high-impact publications and media/press stories, particularly with a more interdisciplinary approach than previously seen within the department.

INITIATIVES

It is crucial that the department's research groups undergo reorganization to enhance their clarity and visibility in communicating their key research priorities. This effort will be reflected through a targeted update of the institute's website. Several research groups need structural and strategic reinforcement, particularly in highlighting the overlaps in activities among participants within the groups. Reorganizing the research groups is essential for improving success rates in securing external funding.

STATUS 2025

1. Free up more time for research and funding activities for all VIPs

As mentioned above, IMF continues to work systematically to reduce the teaching load in order to increase researchers' opportunities for research and external funding. We have advertised a number of positions, but unfortunately, recruitment has not been successful to a sufficient extent. We are also working on hiring a teaching associate professor to relieve the teaching burden, in line with a recommendation from the department evaluation

2. New Initiatives in 2025 with Expected Significant Visibility.



The establishment of the Center for Quantum Communication under Petar Popovski is well underway, and IMF's participation was clearly visible at the launch.

The collaboration with Orient's Foundation is progressing according to plan, and the department is experiencing increasing activity in this area. In addition, promising and binding partnerships have been initiated with the Danish Maritime Fund and Everllence.

3. Below is an overview of press stories and mentions in the period 2020 to 2024

In 2025, the department's researchers have been far more visible in the media than ever before. However, this increased attention has not been related to maritime activities, but rather to the use of statistical methods for solving crimes through DNA trace analysis.

År	Pressehistorier	Omtaler pr. historie
2020	10	3,9
2021	5	2,2
2022	10	2,1
2023	21	1,7
2024	44	4,1

SUPPLEMENTARY INFORMATION ON VISIBILITY

- PlumX data shows that several publications from the department have achieved reach through social media. This is evident from the number of captures, mentions, and usage. See the overview in the section on visibility.
- Overview of profiles and digital identifiers for individuals affiliated with the department:

Note: The report is continuously updated, and data may therefore change. The figures below were recorded on June 24, 2024, and June 16, 2025.

Kategori	2024	2025
Antal personer tilknyttet forskningsgruppen	61	41
ORCID-profiler	32	36
Google Scholar-links	3	2
VBN-profilbeskrivelser	4	4

Initiatives



The planned reorganization of research groups within the department is progressing according to schedule, although it is a time-consuming process and will continue into 2026. For the first time, Annual Follow-Ups with individual research groups will be held in January and February.

Goals for 2026:

- (1) Websites for all research groups are currently being developed, and communication of their activities will be strengthened. The first Annual Follow-Up will take place on 23 February 2026, featuring status presentations and plans from all research group leaders.
- (2) Increased visibility of maritime activities, including through *Blue AAU*.
- (3) Outreach to partners and targeted foundations for support of research, teaching, and innovation in mathematical econometrics, statistics, and quantum mathematics (communication and control).
- (4) Continued efforts to leverage and strengthen opportunities within biostatistics and forensic genetics

Openness

Current status:

Please provide a brief status of how far you have come within openness.

GOAL 2025

1. The activities for 2024 have been initiated and will continue in 2025. Through monthly staff meetings, efforts will be made throughout the year to ensure that all department articles are preferably published as Open Access (where appropriate) and registered in VBN (Pure).
2. It is crucial to clarify external communication regarding research activities, primary objectives, and research staffing within each research group.

STATUS 2025

1. In Denmark, the Open Access Indicator is produced and released annually by the Danish Agency for Higher Education and Science, part of the Ministry of Higher Education and Science. The Ministry harvested our Pure data in March 2025 (2023 publications). We are in continuous dialogue with the Ministry, however at this point we have not yet received the result for 2025. Once the result is available, we will update the table below and the Power BI in the SWAY report.

Below is an overview of the department's Open Access status for publications that count in the national Open Access indicator.

	Open Access	Unused OA potential	Blocked
2022 ENG faculty	67%	14%	19%
2022 Department of Mathematical Sciences	87%	11%	2%



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The department is performing satisfactorily, and therefore no additional initiatives are required

Goals for 2026:

IMF does not currently see a need for additional initiatives but will continue to monitor performance.



APPENDICES

Overview of any appendices/attachments

1. *Name of appendix*
2. *Name of appendix*

APPROVAL

The section of the agreement concerning the performance agreement for the AAU Research and Innovation Indicator was approved at a meeting between the department management and the dean's office
Click or tap to enter a date.