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# COLLABORATION WITH AARHUS UNIVERSITY

– the bridge between research and industry



AARHUS UNIVERSITY



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# 1. INTRODUCTION

Aarhus University welcomes collaboration as a way to utilise research results and contribute to the development of society and industry. Collaborating with private and public authority partners is a valuable way for the university to create impartial research for the benefit of society. The university is prepared to bring its entire range of academic expertise into play in order to increase the competitiveness and knowledge of businesses and authorities.

The purpose of this guide is to provide existing and potential partners with a quick overview of the opportunities and principles for research collaboration with Aarhus University. The guide is thus, in particular, intended for private businesses, foundations and public authorities.

First and foremost, the guide describes two types of research collaboration – co-financed research and commissioned research. The guide also covers specific topics and questions which experience has shown are particularly relevant to collaborations on research.









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## 2.

# ENTERING INTO AGREEMENTS

Aarhus University is one single legal entity. This means that when the university enters into an agreement, Aarhus University as a whole becomes party to it. Partners, therefore, cannot enter into agreements with one or more researchers alone, and a department or a faculty cannot enter into agreements on just their own behalf.

AU's rector, deans and heads of department are the authorised signatories for Aarhus University.

AU Technology Transfer Office (AU TTO) is usually in charge of preparing and negotiating contracts with partners on behalf of Aarhus University. AU TTO ensures that all agreements comply with the specific rules and regulations to which the university is subject. AU TTO also makes sure that agreements are always signed by the right people.

It is Aarhus University's goal to ensure that the respective parties' expectations regarding a collaboration are fully clarified by the end of the negotiation phase.

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### 3. TO TYPER SAMARBEJDER

In general, partners can participate in two types of research collaboration with Aarhus University – co-financed research and commissioned research. The differences between the two types of collaboration primarily concern financing and publication.

The two types of collaboration are described in sections A and B below.

Aarhus University is subject to certain statutory requirements and as a result, the terms and conditions of both types of collaboration are largely fixed. All research at Aarhus University must also comply with the *Danish Code of Conduct for Research Integrity and the Policy for research integrity, freedom of research and responsible conduct of research*.

The table below from Universities Denmark outlines the most important differences in the terms for co-financed research and commissioned research.

	CO-FINANCED RESEARCH	COMMISSIONED RESEARCH /COMMERCIAL ACTIVITIES
THE NATURE OF THE PROJECT	AU's activities in connection with the project must support AU's main tasks and must, as a general rule, support research and publication..	The activities must derive from AU's general research activities and are, therefore, not central research tasks
THE UNIVERSITY'S FINANCES	AU may finance part of the project. The project budget must include a contribution to cover indirect costs (overhead). Government research funding usually operates with 44% in overhead of the budget.	All AU's costs must be covered, and AU must not undermine competition within the specific area. This means that the budget must include a significantly larger overhead than the overhead required in co-financed research
PUBLICATION	It must be possible to publish AU's results.	AU's results may be kept secret.
RIGHTS	AU's results belong to AU. AU may sell or license its results to the company on market terms.	The external partner may obtain the rights to AU's results.

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## A. CO-FINANCED RESEARCH

An agreement on co-financed research may involve two or more parties. In case of co-financed research, all parties involved contribute financially to the project. One party's contribution may consist in conducting research, providing funding or a combination of the two. As a rule, Aarhus University will contribute by conducting research, and part of AU's costs will be covered by the university.

In connection with co-financed research, all parties involved possess the rights to the shared project results with due consideration for their respective contributions.

Aarhus University may conduct co-financed research as long as the research in question falls within the normal activities of the university and the relevant department, and as long as it takes the form of actual research.

In connection with co-financed research, it is a non-negotiable requirement that Aarhus University must be able to publish the results of the research. This obligation is defined in the University Act.

Compared to commissioned research, co-financed research usually requires a smaller financial contribution from an external partner.

## B. COMMISSIONED RESEARCH

As a general rule, an agreement on commissioned research involves Aarhus University and only one external partner.

Within commissioned research, Aarhus University provides research services on market terms (so-called commercial activities). The research services must meet the same requirements for research integrity as other research activities.

The price for Aarhus University's work is fixed, but varies from one department to the next, and depends on the hourly rates of the researchers involved. In connection with commissioned research, the university may renounce the right to publish subject to further agreement.

Commissioned research usually requires a larger financial contribution from the partner than co-financed research in order to cover the university's direct and indirect costs, as the research services are offered on market terms. In return, the partner can choose the subject of the research and gain ownership of the research results.

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## 4. CONFIDENTIALITY

In most collaborations, it is necessary for the parties to exchange confidential information. Usually, it will even be a prerequisite for entering into a collaboration agreement on a specific research project that the parties have explored the possibility and basis for collaborating by exchanging confidential knowledge in advance.

Danish law – especially the Danish Public Administration Act – ensures that a person who receives confidential information must in certain cases keep the information confidential. These rules apply even if the parties have not entered into any specific agreement on confidentiality. Outside this area, confidentiality is regulated by agreement. However, in parallel with the statutory protection, Aarhus University usually enters into a specific non-disclosure agreement (NDA) when confidential information is to be exchanged with the university as the recipient or sender. The purpose of an NDA is to establish a confidential domain for exchanging information.









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## 5. MATERIAL TRANSFER AGREEMENTS

In cases where a collaboration between Aarhus University and an external partner includes transfer of tangible material, the parties will enter into a material transfer agreement (MTA). This is usually relevant when biological material, cell lines, chemical substances etc. belonging to one of the parties are required by the other party for research purposes. The purpose of an MTA is to clearly define the parties' rights and obligations in relation to the transfer.

## 6. PUBLICATION

In accordance with the University Act, all Danish universities must disseminate knowledge of the methods and results of science conducted. As a research institution, Aarhus University therefore seeks to publish as much new knowledge as possible.

Rights and restrictions involved for Aarhus University and a partner in connection with the publishing of results from a shared research project will always rely on the specific collaboration agreement. However, any agreement will always be based on the following principles:

- When the university contributes financially to a research collaboration, the university must be able to publish its results.
- Publication of results and authorship of publications must comply with the Danish Code of Conduct for Research Integrity and AU's Policy for research integrity, freedom of research and responsible conduct of research.
- Publications can be sent to the partner for review subject to specific agreement. However, the publication's final content will always be up to the author.
- The publication of results may be agreed to be postponed for up to three months in order to protect intellectual property rights.
- The university may renounce the right to publish the results of commissioned research subject to specific agreement.



...network studying systems that can interact with the environment throughout their computation (as opposed to the traditional computation, where the interaction is limited to input-output exchange), proving that R-ANNs are equivalent to interactive TMs.

Very-large-scale and reservoir-like neural networks can also rely on VSA as a key ingredient, as in the reservoir computing framework (Eliasmith et al., 2012; Stewart, Chao, & Burchard, 2014), which employs semantic pointers for addressing distributed representations in activation space, and recent work on the interface between reservoir computing and connectionist symbolic approaches (Hinault & Dominey, 2013; Hinault, 2014; Dominey, 2014).

In contrast, the present work focuses on parsimonious VSA representations, building upon the seminal results from Sipert and Sussner (1991, 1995), and work from Moore (1988, 1991) who has shown that nonlinear dynamical systems on the unit square can simulate the linear dynamical systems on the unit square. In this paper, we extend Moore's results by showing that R-ANNs can simulate the dynamics of any TM in real-time<sup>1</sup> when the machine is represented as a generalized shift (GS) on dotted sequences. This is the first extend Moore's results by showing that R-ANNs can simulate the real-time simulation of a range of models of computation, including but not limited to Turing Machines (of course, this is not any other model of computation of lesser or equal power, but not necessarily in real-time; see Section 2.1.1 for a discussion). We achieve this by relaxing the definition of GS, which is a novel approach to the expressive shift map, the versatile tool which can be used to simulate any TM in real-time.









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# 7. INVENTIONS, PATENTS AND LICENCE AGREEMENTS

Collaboration on research can lead to new knowledge in the form of inventions. Usually, a collaborating private company is granted first access to negotiations on licensing in the collaboration agreement. In some cases, licence terms and conditions have been established in the agreement in advance.

When Aarhus University's researchers make an invention, the university will usually seek to commercialise it. First and foremost, this means that the invention must be patented.

Following patenting steps, the invention must be exploited - e.g. through a licence to an external partner.

A licence agreement with an external partner can be exclusive or non-exclusive, and it will be subject to negotiation on market terms if no framework agreement exists. Rights to inventions produced as part of a research collaboration are usually governed by the collaboration agreement.

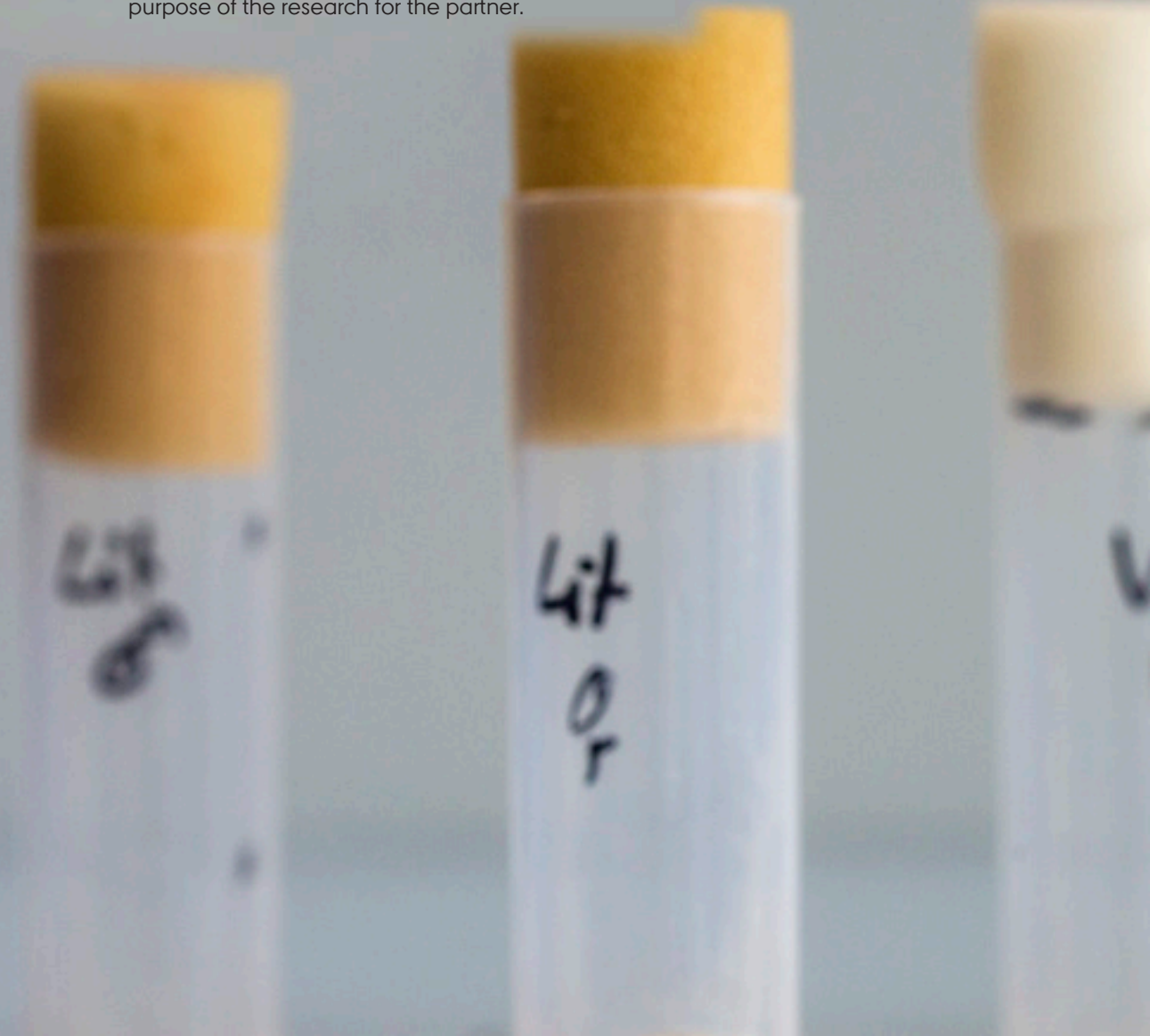
Aarhus University always stipulates that licence agreements must not prevent researchers from continuing their work. This means that an agreement must not prevent the researchers from continuing their research within the same field.

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## 8. USE OF RESEARCH RESULTS

How the parties may use the output of a collaboration (the research results) will always be detailed in the specific agreement between Aarhus University and the partner. The terms and conditions of the specific agreement will reflect the type of collaboration – co-financed/ commissioned research – and the parties' respective contributions.

Regardless of the nature of the collaboration, Aarhus University will always ensure that the agreement is composed in a way which makes it possible for the partner to make sufficient use of the results to fulfil the purpose of the research for the partner.







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If you want to know more about collaboration with Aarhus University, please contact the AU Technology Transfer Office:

Technology Transfer Office  
Tel.: +45 87153205  
Email: [tto@au.dk](mailto:tto@au.dk)

The sooner the AU Technology Transfer Office is included in the negotiation process, the better service the office can provide in order to negotiate a balanced agreement.

Alternatively, if you already know which research group or department you want to collaborate with, you are welcome to contact them directly, and they will then contact the AU Technology Transfer Office