



Physical Sciences

Joint Academic and Commercial Quality Research & Development (JACQUARD)

Fifth Subsidy Round

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Netherlands Organisation for Scientific Research

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1 Introduction

The NWO Council for Physical Sciences invites researchers interested in the field of Software as a Service to take part in the 2009 subsidy round for the research programme for Joint Academic and Commercial Quality Research & Development (JACQUARD).

The Jacquard research programme was originally a joint initiative of the Ministry of Economic Affairs, NWO Physical Sciences and the Technology Foundation STW, with support from the General Board of NWO. Jacquard implements the policy set out in the National Research Agenda for ICT 2005-2010 (NOAG-ict), the ICT Agenda for the Future of the Netherlands ICT2030.nl, and the Strategic Research Agenda of the ICT Innovation Platform for Software as a Service. This call for proposals also relies on the Strategic Research Agenda of the NESSI European Technology Platform. These policy documents underline the strategic significance of software and service engineering for the Netherlands and Europe in the medium term. The programme is part of the thematic programme Knowledge Base for ICT Applications at NWO.

Software as a Service (SaaS) is one of the priorities of the Netherlands Organisation for Scientific Research (NWO). As an incentive to develop SaaS research, NWO has allocated € 2.0 million for this fifth Jacquard call for proposals.

2 Objective

The aim of the Jacquard research programme is the enhancement of the Dutch knowledge position in the field of software and service engineering. The emphasis in this subsidy round is on the field of 'Software as a Service'. Jacquard aims to achieve its goal through a strong involvement of people who might potentially use the research findings in steering scientific research in this field. The programme's emphasis is on research that could lead to concrete applications within five to ten years.

Scope of the fifth Jacquard subsidy round

'Software as a Service' is defined for the purposes of this call as:

"A service delivery model in which remote components of services are accessible through a software interface. These components can be combined to create new services delivered via flexible networks. 'Services' here refers not only to electronic services, but also to services provided in society or at business level."

This description of the SaaS field is based on the Strategic Research Agenda, which was recently compiled by the Software as a Service ICT Innovation Platform (IIP-SaaS). The Strategic Research Agenda may serve as a source of inspiration, helping to identify questions that are relevant to the market, particularly in relation to financial services, health care and government. These are examples of sectors in the Dutch service economy where SaaS research could make an important contribution. The programme welcomes proposals that focus on applications in one or more of these sectors. However, proposals could also be related to applications in other service-oriented sectors.

More details on the scope of this Jacquard subsidy round are provided in Appendix 1.

Main themes in the subsidy round on 'Software as a Service'

The Jacquard research programme focuses on the formation of consortia consisting of research groups (supply side) and businesses or other partners from society (demand side). Successful consortia will make contributions to one or more of the following four research themes, all four of which are open to new research proposals in this round:

- Service innovation in society and business
- Service evolution at the level of the technology
- Service transition in society and business and at the level of the technology
- Governance and service delivery

The Strategic Research Agenda issued by IIP SaaS expressed the intention to move towards a distributed infrastructure in the Netherlands in which reusable software services are provided to third parties. These services could rely on files or basic records with fictional data. The infrastructure is intended to accelerate innovation and product development and to promote testing and experimentation with innovations. Researchers are invited to explain how their proposal would contribute to the development of such infrastructure.

a) Service innovation in society and business

Service innovation is a field of research that focuses specifically on the opportunities that SaaS offers for society and business. Technology creates new opportunities that can only become a reality by bringing business structures and operations into line with the possibilities of new technologies. This theme corresponds in part to the

NESSI research themes of 'service and systems engineering'¹, 'a systematic foundation for a service economy'² and 'business process modelling'. However, research proposals for innovation in society and business will only be considered if software technology plays a significant role.

Service innovation can be approached in various ways, e.g. from the process as a whole or from the relevant aspects. These approaches constitute a methodology for services science, management and engineering.

Working from the process, it is possible to identify such steps as exploring, designing, redesigning and providing services. Working from the aspects, it is possible to distinguish between technology-based knowledge used in SaaS and business management knowledge. It would also be possible to make a distinction between the aspects relevant to design (e.g. architecture) and the aspects relevant to delivery (e.g. governance).

Research questions that can be pursued on the basis of methodology are often fundamentally about value creation in designing and redesigning services. The research proposal could take the perspective of the organisation providing a service or the organisation purchasing a service.

Questions from the purchasing organisation could include:

- How is design and innovation handled for the package of services to be provided?
- How do people find third-party services (from suppliers)?
- How could the organisational and technical consequences of redesigning services be assessed? What new problems arise in relation to IT audits?
- How would (economic) argumentation to support a business case be developed?
- How does the innovation process take place? How do development and testing take place?
- What approach should be taken to deal with risks (security, continuity of service, risk of lock-in)?

Questions from the organisation providing the service could include:

- How can networks of services be composed automatically or semi-automatically, assuming specific client demand, a service model and a commercial range of services?
- What would be suitable methods for pricing, invoicing, payment and ownership in the context of software services? What licensing structures would be adequate?
- How can service provision be brought into line with a specific business model?
- How can services be split up into smaller services that may be able to be launched on the market by third parties under better conditions?

Architecture topics that could be researched include:

- How can models of services that are offered be converted into software implementations?
- What resources or software tools could be used for that purpose?
- How can software architectures anticipate change?
- How can interoperability be achieved in a SaaS environment?

¹ Specifically item 2: "Mapping quality of experience to non-functional properties of components".

² Specifically item 3: "Support emerging business models for innovation".

- What standards are required (in operational management and in technology) to ensure that it is possible for organisations to switch to other service providers?
- How is it possible to create contracts that are in effective alignment, even if they are based on different legal systems?
- How can the quality and viability of standards be determined?

b) Service evolution at the level of technology

This theme corresponds in part to the NESSI research questions on 'reference architecture and implementations' and on 'adaptive interactions'³. A 'greenfields' approach could be used to research the technology needed to create flexible and scalable solutions for providing services in network organisations. Research questions here include:

- Which modelling languages are needed to describe processes and services?
- How might it be possible to move automatically from models to software?
- Which tools (code generators and interpreters, configuration mechanisms) are needed here?
- How can scalable methods and technologies be achieved?
- How is it possible to develop technology that conforms to standards ('non-proprietary') when research is supposed to be innovative?

It is well known by now that actual systems are rarely developed in a completely pristine setting ('greenfields'). They generally have to be superimposed on an existing infrastructure that includes existing ('legacy') applications. This leads to new scientific questions in such fields as:

- Describing services at a high level of abstraction:
 - How might it be possible to create a good description of services for existing software and to restructure the software accordingly (software analysis and transformation)?
- Developing a platform:
 - How can interoperability be increased for services, workflow systems, portals and platforms, both with each other and with legacy software?
 - How can security be guaranteed?
 - How can guarantees of continuity and scalability be provided?
 - What options are available for standard software?
- Evolutionary methods and techniques:
 - How can service quality be assessed in advance, even in a scenario that combines legacy software and new services?
 - How might it be possible to realise a process of continuous change toward SaaS?
 - What tools are needed for development, testing, validation, simulation?

The concept of Software as a Service is also on the rise in the world of embedded systems. Unsurprisingly, some of the problems that have to be resolved in the technology for Software as a Service are also encountered in embedded systems. This includes questions related to searching and finding services in databases, service versioning, describing service level agreements that govern how services are provided, etc. In addition, issues involving runtime environments that support services in embedded systems are sometimes comparable to issues in other fields. If research proposals focusing on embedded systems yield results that can be generalised for the general research field of Software as a Service, such proposals

³ Specifically item 2: "Knowledge and situation-driven personalization of interfaces and services".

would also be within the scope of this call. However, proposals concerning problems specific to embedded systems would be outside the scope of the call.

c) Service transition

This theme corresponds in part to the NESSI research questions on 'service and systems engineering'⁴ and 'adaptive interactions'⁵. Service transition encompasses issues in a highly diverse range of knowledge fields, including business administration, law, social sciences and information and computing sciences. Research proposals focusing on service transition will only be considered if software technology plays a significant role.

Research questions that could be addressed in the framework of this theme include:

- Change management:
 - What would be a good organisational structure for service transition?
 - How might it be possible to plan the necessary changes in the organisation?
 - Which reference solutions would be suitable for which situations?
- Technology management:
 - Which technical analysis is needed to determine whether migration to SaaS would be desirable?
 - How can continuity be guaranteed during transition?
- Risk management:
 - What risks occur during transition?
 - What steps can be taken to mitigate these risks?
 - What is the situation specifically in regard to risks related to security and privacy?
 - How are quality and progress measured?
 - Can a future situation be simulated?
 - What obstacles arise for the IT audit?
 - What is the role of compliance during transition?

d) Governance and service provision

The Netherlands traditionally holds a prominent position in the development of reference models and standards, such as ITIL (Information Technology Infrastructure Library) and BISL (Business Information Services Library). The development toward SaaS demands further expansion of these models and standards. This corresponds in part to the NESSI research questions on 'end-to-end trust, security, and dependability'⁶ and 'systematic foundation for a service economy'⁷.

Relevant scientific questions could be researched in such areas as:

- Business models for the delivery and maintenance of services
- How can service continuity be guaranteed?
- Which payment models are useful, and how do they work together in a network?
- What contract forms are needed in a SaaS network?

⁴ Specifically item 1: "Modelling, construction and management of hybrid service-based systems".

⁵ Specifically item 1: "Collaborative business intelligence for hybrid service-based systems".

⁶ Specifically item 1: "Provide a chain of trust across all levels and trust zones".

⁷ Specifically item 2: "Develop a counterpart for the classical theory of the organization".

However, research proposals will only be eligible if they focus on Software as a Service, and not if they focus on the development of a general theory related to business management or economics.

- How should governance be structured in such a way that privacy, security, scalability, authorisation and personal identification are arranged properly?
- Is it possible to draw up standards for this?

3 Guidelines for applicants

3.1 Who can apply

Applications can be submitted by researchers at Dutch universities, the NWO and KNAW (Royal Netherlands Academy of Arts and Sciences) institutes. The application is submitted by one researcher (the main applicant) affiliated with one of the aforementioned research institutes, on behalf of a consortium. The consortium should in any case include:

- One or more research groups
- One or more parties from the 'demand' side. These demand-side participants could be businesses and/or other societal organisations.

In the context of software engineering research, Jacquard aims to make the maximum possible use of the available expertise in the field of Software as a Service. A combination of competencies in multidisciplinary teams can lead to advantages for both software engineering and the research disciplines involved in Software as a Service (see also Appendix 1 under Scope). Universities of applied sciences may be co-applicants within a consortium.

You must provide a copy of your application to the director or dean of your institute. When you submit a proposal, the Jacquard programme bureau assumes that you have informed the institute, and that your university or institute has accepted the subsidy conditions of this competition. In addition, you:

- Should be in possession of at least a master's degree or equivalent qualification;
- Should have sufficient research experience;
- Should remain effectively involved in the research for which the subsidy application has been made during the period for which the subsidy has been requested.

The simultaneous submission of identical or strongly similar proposals is not permitted.

Women are expressly invited to submit applications.

3.2 What can be applied for

This subsidy round involves € 3.33 million in funding. The subsidy amount is structured as follows:

- € 2.00 million in subsidy for the purpose of hiring new or currently involved researchers (PhD students, postdoctoral researchers) and support staff (such as programmers), personal bench fees, project-specific equipment/software and additional travel budgets;
- Approximately € 1.33 million in capitalised input from the research institutes and demand-side parties.

3.3 When can applications be submitted

The subsidy round consists of two phases:

- The compulsory pre-registration phase. In this phase, you can submit summarised research proposals (preliminary applications). The guidelines are

set out in Appendix 2. The preliminary applications must be delivered to the Jacquard programme bureau no later than Thursday, 5 November 2009 at 12 noon.

- The specification phase. The assessment committee advises applicants as to whether or not they should submit a full application. The guidelines for the full application are set out in Appendix 3. The full applications must be delivered to the Jacquard programme bureau no later than Tuesday, 22 December 2009 at 12 noon.

3.4 Drawing up the application

All proposals (both the preliminary and the full applications) should be written in English in order to make it possible to consult foreign reviewers. The proposal should be comprehensible on its own. References to internal papers should therefore be avoided. Only references to 'open literature' are permitted. In the event of a referral to a preprint being unavoidable, you are requested to send one copy (in electronic form) together with the proposal so that the assessors can, if so desired, acquaint themselves with the document. Further information about drawing up an application is enclosed (see Appendices).

3.5 Specific subsidy conditions

Applications which have been honoured must start up no later than nine months from the grant date. The subsidy will expire at that time for projects which have not yet been started.

3.6 Submitting an application

You are required to use Iris, the NWO electronic grant application system. You can find the Iris operating procedures and user manual at <http://www.iris.nwo.nl>. An application consists of two parts: a fact sheet outlining key information on the applicant and the application, and the actual research proposal. You should make use of Iris to fill in and submit the fact sheet electronically. One of the sections of the fact sheet is a summary of 250 words maximum, written in Dutch, which should correspond with the English summary in the proposal. You should send the proposal as an attachment in PDF format at the same time that you electronically submit this fact sheet.

When filling in the online **fact sheet**, you can only make use of ASCII characters ('plain text'). Use of formulae, italics etc. is therefore not possible on the fact sheet. These can of course be used in the **research proposal**.

Reviewers

You are asked to put forward three suggestions for potential foreign reviewers who may be consulted. Kindly state full names, including web addresses and e-mail addresses. *Only reviewers who are not involved with the applicant research team or with the application are eligible.* The assessment committee will also be asked for suggestions. A number of reviewers from this pool will be contacted.

4 Assessment procedure

4.1 Procedure

4.1.1 Assessment

The contents of the preliminary applications and the full proposals will be assessed by an international assessment committee. The aspects assessed will include: **suitability** in the context of the contents, themes and objectives of the Jacquard programme, **scientific quality**, **innovativeness**, and **relevance**.

These aspects should be represented in the proposal to a sufficient extent. The assessment committee assesses the preliminary applications against the definition of the scope (Appendix 1).

Within three weeks after submitting the preliminary application, the applicant receives a recommendation from the assessment committee stating whether or not the brief summary of the proposal should be developed into a full application. If the assessment committee feels that the summarised research proposal pertains to a different research theme than the applicant has specified, they will notify the applicant accordingly. If two or more applicants have submitted preliminary proposals on the same research topic, the assessment committee may also suggest that the applicants submit a full application jointly.

4.1.2 Interview (selection)

The assessment committee will hold interviews with applicants who have submitted full and complete research proposals in the week of 22 through 26 February 2009. The applicants are expected to give a short presentation (approximately 10 minutes) about the role played by the 'demand-side' parties involved (public and private sector) and their contribution in money and/or manpower. Following the introductory presentation, the members of the assessment committee will ask the consortium members questions. The interview gives the assessment committee the opportunity to gauge the extent to which the 'demand-side' parties are involved in the project. The applicants invited to give a presentation will receive a protocol well in advance explaining how the interview process works.

4.1.3 Decision-making

The Steering Committee will decide to honour or reject the research proposals based on the prioritisation recommendation issued by the assessment committee.

4.2 Criteria

4.2.1 Formal admissibility of applications

A preliminary application or a full application will not be recognised by the programme bureau if one or more of the following administrative issues apply:

- The application form is filled in incorrectly or is incomplete and the applicant has not responded to a request to complete it;
- The application has not been submitted by a researcher from an accredited scientific research institution;

- The application does not correspond with the objective of the subsidy;
- The application has not been electronically submitted via Iris;
- The application has been submitted too late.

Once the formal admissibility is in order, the proposal will be taken up and sent to reviewers.

4.2.2 Active input and involvement of the industry

All Jacquard proposals are required to include active input and involvement in the research by parties from the public or private sector – businesses or other societal organisations ('demand-side' parties). Active input is expressed in the description of the research to be conducted, in the work programme, and in the roles that all partners play in the project. Active input translates into a financial commitment. During the preliminary phase, the commitment is expressed in the form of a serious intention. It is necessary in this context to describe the tangible roles played by the demand-side parties, to specify the designated contacts and to give an impression of the expected financial contribution from the demand-side parties.

In the full application, the commitment is expressed in component C of the project budget.

Within three months after the subsidy application is honoured, the applicant must submit a definitive financial commitment from the participating demand-side parties in the form of a signed partnership letter in accordance with Appendix B of the "Framework Agreement for Jacquard User Committees", as available on the Jacquard website (www.jacquard.nl).

4.2.3 Content assessment

Both the preliminary applications and the full applications will be evaluated by the assessment committee on the criteria of **suitability** in the context of the contents, themes and objectives of the Jacquard programme, **scientific quality**, **innovativeness**, and **relevance**. The criteria are of equal significance.

Scientific quality of the proposed research will be tested on the following characteristics:

- Scientific gains from the proposal;
- Clarity of the research objective;
- Competency of the research team;
- (Feasibility of) the work programme;
- Relationship between research objective and requested resources;
- Urgency of the proposed research.

Innovativeness is demonstrated in proposals that lead to new concepts, a deeper understanding or new methods. The newness of the proposal may come from new ways of applying existing techniques and methods, or from the development of new techniques.

Relevance of the proposed research, tested on the following characteristics:

The research is relevant to non-scientific parties and is relevant to systems and problems in 'the real world'. The proposal must provide substantiation that the research could lead to concrete applications within five to ten years. It must also indicate how the proposal contributes to a future distributed laboratory for developing services in the Netherlands. Potential areas of application could be in the private and/or the public sector. The Strategic Research Agenda IIP-SaaS (see section 3) and the Strategic Research Agenda for NESSI may be used as sources of inspiration for this purpose.

In the event that proposals end up at the same level of priority in the assessment process, precedence will be given to the proposals which already specify one or more potential implementing parties or which have a woman as the main applicant on the proposal.

4.3 Committee members

Both the preliminary applications and the full applications will be assessed by an international assessment committee with representatives from universities and the business community.

5 Other information

5.1 Contact

For further information, please contact

– Sjoerd Meihuizen

– Telephone: +31 (0)70 344 07 10

– e-mail: s.meihuizen@nwo.nl or Jacquard@nwo.nl

5.2 Documentation

Download this call for proposals and other information from the Jacquard website:

www.jacquard.nl

5.3 Timeline

<i>1 September 2009</i>	Launch of the call for proposals
<i>5 November 2009</i>	Deadline to submit Jacquard preliminary applications to the Physical Sciences division of NWO
<i>5-19 November 2009</i>	Selection of preliminary applications by assessment committee
<i>20 November 2009</i>	Announcement of the results from the preliminary application round
<i>22 December 2009</i>	Deadline for submitting full and complete Jacquard applications
<i>From 22 December 2009</i>	The proposals are sent to reviewers for assessment
<i>25-31 January 2009</i>	Applicants receive comments from the reviewers and have the opportunity to respond ('rejoinder')
<i>4 February 2009</i>	Final submission date for rejoinders
<i>22-26 February 2010</i>	Interviews. Following the interviews, the assessment committee draws up its advice for order of priority
<i>8-12 March 2010</i>	The steering committee decides to honour/reject subsidy applications. Following this decision process, the grant approvals and rejection letters are sent out

5.4 English and Dutch Version

This call for proposal is available in English and in Dutch. Please contact the Jacquard office or go to www.jacquard.nl for further information.

6 Appendices

6.1 Appendix 1: Scope of the 5th call of the Jacquard programme

Introduction

This document serves as a guideline for the assessment committee and for applicants as to which proposals are in scope or out of scope of the 5th call for the Jacquard programme for Software as a Service.

Considerations

The purpose of the Jacquard programme is to strengthen the Dutch knowledge position in the field of Software and Service Engineering. This 5th round emphasises applications contributing to the development of 'Software as a Service'.

Scope

There are two aspects considered when determining whether the proposal is in scope or out of scope:

- Does the proposal fit into the call?
- Is the proposal relevant for advancing Software as a Service in the Netherlands?

Fit

Jacquard is a research programme for software engineering and information systems. Therefore, proposals are only in scope if they make a substantial scientific contribution to the academic body of knowledge in software engineering and information systems. However, not all advancements in software engineering and information systems are in scope. The proposal should have a clear focus on 'software as a service', as indicated in the call. This includes contributions to the emerging field of service engineering, but only if the proposed research maintains a balance between business and technology. Advancements in software engineering and information systems focusing on other topics are not in scope.

There are topics mentioned in the call that belong to other scientific disciplines than software engineering and information systems. Examples of such disciplines include business, economics, and law. Contributions from such disciplines (in the context of Software as a Service) are welcomed in multidisciplinary teams and proposals. However, the largest contribution (scientific merit, innovation) made by the research project should be to the field of software engineering and information systems.

Relevance

An essential aspect for the Jacquard programme is the serious involvement of (potential) users in the definition and execution of the projects. Finance, health care and government are important sectors in society that face challenges with regard to 'software as a service' which may inspire the research teams. Because of the research-oriented nature of Jacquard, proposals focusing on other sectors are also in scope, as are proposals which include participation by (potential) users, but which do not focus on a particular sector of the society.

Relation to NESSI roadmap (vol.3.FP7-2.exec)

Requirement	NESSI Research	Research Area	Jacquard Call 5
Provide a flexible infrastructure to support the networked economy	Advanced infrastructure technologies in: -Hardware, OS -Desktop virtualisation -Programming models -Energy-conscious software design	Service-oriented utility infrastructure	Not included
Provide coherence to the composition of uncoordinated services across all layers and all providers	-Hybrid service-based systems; -Mapping QoS to non-functional properties of components; -Refining semantics	Service and system engineering	Included
Add the dimension of knowledge to the interaction between user and (business and societal) services	-Collaborative business intelligence for hybrid service-based systems -Knowledge and situation-driven personalisation -Educational principles	Adaptive interactions	Included to the extent that it is related to services. Not included when addressing general principles of user interaction.
Pave the way towards the collaborative executable enterprise	-Dynamic formation of processes through services -Long-term and transactional business collaboration	Business process modelling	Included
Define open architectures for intranet to internet-scale service delivery	-Harmonise SOA and SOI architectures to support all kinds of business and provisioning models - applications and hardware environments -for all stakeholders	Reference architecture and implementations	Included
Materialise ubiquitous service availability	-Turn devices into enablers of services by embodying SOA principles in embedded systems -link collaborative devices to services	Services pervasiveness	Not included
Provide end-to-end trustability in hybrid service-based systems	-Provide a chain of trust across all levels/zones - end-to-end verification and assurance - persuasive tactics and intuitive security	End-to-end trust, security and dependability	Included to the extent that it is related to services. Not included when addressing general principles of security in systems
Ensure social, economical legal and cultural viability	-Make services accessible to all -Multidisciplinary research to build a theory describing the relationship between organisations	Systemic foundation for a service economy	Only included if a significant part of the investigation is related to technology. Purely legal, social or

	<p>and social networks in regard to hybrid service-based systems</p> <ul style="list-style-type: none"> -Support emerging business models for innovation -Gain an understanding of OS community collaborative processes -Gain an understanding of OS business models and their impact on the service economy 		<p>economic research is not included.</p>
<p>Provide the business context for services in hybrid service-based systems</p>	<ul style="list-style-type: none"> - Build specific, collaborative, service-based business systems for targeted application domains, e.g. industry, automation, education 	<p>Building NESSI</p>	<p>Not included. However, a contribution to the realisation of an NL initiative for an open test bed is included in the call.</p>

6.2 Appendix 2: guidelines for setting up a preliminary application

Submitting the preliminary application

The preliminary applications (as PDF file only) should be in the possession of the Jacquard programme bureau **no later than Thursday, 5 November 2009 at 12 noon**. You must use Iris, the electronic grant application system provided by NWO. To access Iris, go to: <http://www.iris.nwo.nl/>. Here you will also find the Iris operating procedures and manual.

Submitting a preliminary application involves four steps. In the first three steps, you provide factual information about your preliminary application (title, main applicant etc.)⁸. In the first step, amongst other things, you are asked to provide a summary. This is the scientific summary (maximum of 250 words) which is submitted to the reviewers.

In the second step, you check your own details. In the third step, you add any co-applicants. In the fourth step, you add your preliminary application in **PDF format** as an attachment.

The preliminary application should be written in English. The preliminary application should be comprehensible on its own. References to external papers (other than literature references) should be avoided where possible. The text in section 4 should not exceed 1200 words.

1a Project Title

A title for the research for which you are requesting funding. The title should be as short as possible, while still remaining specific. (Same as you entered in the project information screen)

⁸ When filling in the project information screens, you can only use ASCII symbols ("plain text"). Use of formulae, italics, etc. is therefore not possible. They can of course be used in the **research proposal**.

1b Project Acronym

Enter only if applicable. (Same as you entered in the project information screen)

1c Principal Investigator

State only the name of the first applicant (this is also the contact person and intended project leader).

2 Classification

You are requested to state the Jacquard theme under which, in your opinion, your research falls. You can choose from the following research themes:

1. Service innovation in society and business
2. Service evolution at the level of technology
3. Service transition in society and business and at the level of technology
4. Governance and service delivery

3 Composition of the Research Team

Please specify here which parties are expected to be part of the research team:

- Name(s) of the university/universities and/or institution(s) involved
- Name(s) of the partner(s) from the business sector and/or other societal organisations involved (public and/or private sector)

State for these persons, where known, the names with initials, titles, specialisms and university or institution. You are requested to present this information in a table. You are requested to indicate who will be supervising the PhD student.

4 Description of the Proposed Research (maximum of 1200 words)

Discuss the following aspects in this section:

- Formulation of the research question and the envisaged research outcomes
- Research method
- Scientific importance of the proposed research
- Concrete applications that are the focus of the research, their relevance to non-scientific parties and their relevance to systems and problems in 'the real world'
- Relationship between the proposed research and research being conducted elsewhere
- Describe the tangible role played by the 'demand-side' parties (from the business community and/or other societal parties).

Use the following categorisation in this section:

4a Scientific aspect**4b Innovation****4c Relevance**

Please note: In the section on relevance, you can specify how the project is expected to contribute to a national distributed infrastructure in the Netherlands, in which reusable software services are made available to third parties.

5 Bibliography

A brief list of the references used in the preliminary proposal.

6 Budget

Provide an indication of the type of implementing parties you would like to request and of the total project budget (= subsidy + contribution from the university/universities + contribution from businesses and/or other societal partners). The requested subsidy should not exceed € 440,000. The maximum duration of the project is four years.

6.3 Appendix 3: guidelines for setting up a detailed project proposal

Drawing up the research proposal

All research proposals should be written in English. The proposal should be comprehensible on its own. References to internal papers should therefore be avoided. Only references to "open literature" are permitted. In the event of a referral to a preprint being unavoidable, you are requested to send one copy (in electronic form) together with the proposal so that the assessors can, if so desired, acquaint themselves with the document. The text in sections 6, 7 and 8 together should not exceed 5000 words.

Submitting the research proposal

The research proposals (as PDF file only) should be in the possession of the Physical Sciences division bureau **no later than 22 December 2009 at 12 noon**. You must use Iris, the electronic grant application system provided by NWO. To access Iris, go to: <http://www.iris.nwo.nl/>. Here you will also find the Iris operating procedures and manual.

Submitting an application involves five steps. In the first three steps, you provide factual information about your research proposal (title, main applicant etc.)⁹. In the first step, amongst other things, you are asked to provide a summary. You may use the summary from your preliminary application for this purpose, making adjustments where necessary. In the second step, you check your own details. In the third step, you add any co-applicants. In the fourth step, you may put forward three suggestions for potential reviewers. In the fifth step, you add your research proposal in **PDF format** as an attachment.

Reviewers

You are asked to put forward no more than three suggestions for potential foreign reviewers who may be consulted. Please provide full names, including any academic titles and affiliations, as well as gender and e-mail address. These potential reviewers should not have any conflict of interest with your proposal.

Maximum length: 5000 words for sections 6, 7 and 8.

This works out to approximately 10 pages.

1a Project Title

A title for the research for which you are requesting funding. The title should be as short as possible, while still remaining specific. (Same as you entered in the project information screen)

1b Project Acronym

Enter only if applicable. (Same as you entered in the project information screen)

1c Principal Investigator

State only the name of the main applicant (also contact person).

2 Summary of research proposal

A brief summary of the research proposal (250 words maximum). This is the *scientific* summary which is submitted to the reviewers.

⁹ When filling in the project information screens, you can only use ASCII symbols ("plain text"). Use of formulae, italics, etc. is therefore not possible. They can of course be used in the **research proposal**.

3 Classification

You are requested to state the Jacquard theme under which, in your opinion, your research falls. You can choose from the following research themes:

1. Service innovation in society and business
2. Service evolution at the level of technology
3. Service transition in society and business and at the level of technology
4. Governance and service delivery

4 Composition of the Research Team

The research team consists of three parts:

- The persons to be hired for which funding is being requested ('vacancies')
- The input from the university/universities and/or institution(s)
- The input from the 'demand-side' parties.

For all persons involved, state their names with initials, titles and affiliation (university, institution, company, organisation etc.). You are requested to present this information in a table. If doctoral research is involved, please indicate who will be acting as the official supervisor for the PhD student.

5 Research School

In which research school (or schools) will the applicant project workers carry out their research?

6 Description of the Proposed Research

Discuss the following aspects in this section:

- Formulation of the research question and the envisaged research outcomes
- Research method
- Scientific importance of the proposed research
- Concrete applications that are the focus of the research, their relevance to non-scientific parties and their relevance to systems and problems in 'the real world'
- Relationship between the proposed research and research being conducted elsewhere
- Describe the tangible role played by the 'demand-side' parties (from the business community and/or other societal parties).

Use the following categorisation in this section:

6a Scientific aspect

6b Innovation

6c Relevance

7 Description of the proposed work plan

You are requested to indicate the overall planning of the entire research in periods. A more detailed account should be given of which activities within the framework of the research are expected to be carried out during the next two years. Give a general indication of which tasks the members of the research team will perform in carrying out the research. The maximum duration of the project is four years.

8 Expected Use of Instrumentation

What equipment or software will be necessary for the research? Provide motivation for your answers. Please make a distinction between equipment/software already available and new equipment/software that will need to be purchased.

9 Bibliography

Provide a summary of the references used in the proposal. Please also list the five most important publications by the research team as a whole.

10 Budget

General

The project budget consists of three components:

- A. The researchers, the equipment/software and the additional travel budget for which you are requesting funding;
- B. The input from the university/universities and/or institution(s) (not eligible for subsidy);
- C. The input from the 'demand-side' parties (not eligible for subsidy).

Notes on Component A (requested funding)

(1) Personnel

- Standard amounts are used for the salary costs of the researchers. See Tables 1 and 2.
- Funding for other personnel can only be requested in conjunction with one or more researchers. The duration of the appointment may never be longer than the duration of the appointment for the subsidised researchers. Please note whether the support staff you plan to hire will have an educational background at the level of senior secondary vocational education (MBO), university of applied sciences (HBO), or research university (academic background). See Table 1.
- Wage increases during the project period are included in the standard amounts.

(2) Other

- A personal bench fee will be provided for each PhD student or post-doctoral researcher. Use the amounts from Table 3. The bench fee is primarily intended for travel costs within the Netherlands and abroad for the implementing party/parties appointed, including participation in conferences and congresses, and (for PhD students) for a contribution toward the costs of the dissertation.
- Subsidies may be requested for the costs of project-specific equipment/software, as long as the costs are between €5,000 and € 40,000. Cheaper equipment/software is considered to be part of the infrastructure of the research institutes, while more expensive equipment/software does not fit within the parameters of the Jacquard programme.
- A budget must be provided for any additional travel budget and for any project-specific equipment/software. The requested resources must be accompanied by clear motivation in relation to the requested research positions.

Total for Component A

Projects have a maximum subsidy amount of € 440,000. It is not possible to request extra funding during the course of the project.

Notes on Component B (input from the university/universities and/or institution(s))

- The guideline is that this component constitutes at least 20% of the total project budget.
- Express the input in the research team in terms of capital, based on the university/universities and/or institute(s) involved, as specified in section 4 of the application ('Composition of the research team'). For the permanent staff, use the standard amounts in Table 2. The amounts may be increased by a 50% mark-up for overhead.

Notes on Component C (input from the business community and/or other societal organisations)

- The guideline is that this component constitutes approximately 20% of the total project budget.
- If smaller companies from the SME segment (or comparable ‘demand-side’ parties) are part of the project team, it is permitted for this component to constitute at least 15% of the total project budget. In that case, the ratio between the components A : B : C = 65 : 20 : 15.
- This component can consist of (1) a list of the hours worked expressed as capital, (2) costs of materials and resources used, and (3) use of equipment and machines.

Notes on (1) hours worked expressed as capital

This concerns salary costs and social insurance premiums, increased by a 50% mark-up for overhead. The participants are expected to make an active contribution to the research project. The work plan reflects this expectation and should include an estimate of the numbers of hours that each staff member will work.

Notes on (2) costs of materials and resources used

This should be based on past purchase prices.

Notes on (3) use of equipment and machines

This should take into account depreciations that have already taken place and the intensity of use.

6.4 Summary of the project budget

Complete the following tables.

Component A (to be funded from subsidies)

(1) Personnel (see tables of salary amounts below)	Number of FTE x amount	
a) appointment of new PhD students	..... FTE x €	= €
b) appointment of new post-doctoral researchers	..... FTE x €	= €
c) appointment of (new) other personnel	..... FTE x €	= €
..... +		
Subtotal for personnel		= €
(2) Other		
a) personal bench fee (see Table 3) (only for PhD students and post-doctoral researchers)	..... FTE x €	= €
b) additional travel budget	..... FTE x €	= €
c) project-specific equipment/software	..... FTE x €	= €
d) Dutch and/or foreign guest researchers	..... FTE x €	= €
..... +		
Subtotal for other costs		= €
Total for Component A = subtotal (1) + subtotal (2)		= €

Component B (input from the university/universities and/or institution(s))

(Use tables for salary amounts)	Number of FTE x amount	
Professor	..... FTE x € x 1.5	= €
Senior university lecturer	..... FTE x € x 1.5	= €
University lecturer	..... FTE x € x 1.5	= €
Post-doctoral researcher	..... FTE x € x 1.5	= €
PhD student	..... FTE x € x 1.5	= €
Other personnel	..... FTE x € x 1.5	= €
..... +		= €
Total for Component B		= €

Component C (input from the demand side)

(1) Hours to be worked, expressed in terms of capital, including 50% overhead	= €
(2) Costs of materials and resources used	= €
(3) Use of equipment and machines	= €
..... +	= €
Total for Component C	= €
TOTAL PROJECT BUDGET (= Components A + B + C)	= €

6.5 Salary tables*Table A*

For PhD students, post-doctoral researchers and other staff, use the standard amounts according to NWO VSNU contract agreements regarding remuneration as per 1 April 2001. On 1 July 2009, these standard amounts (not including the personal bench fee) in € based on 1.0 FTE were:

position-->	PhD student	Post-doctoral researcher	Other personnel		
			MBO	HBO	University
duration of the appointment					
1 year	N/A	not possible	47,514	57,140	68,345
2 years	N/A	129,342	96,307	115,820	138,530
3 years	N/A	196,635	146,413	176,078	210,605
4 years	200,013	not possible	197,868	237,959	284,620

Table B

For university lecturers and senior university lecturers, the amounts you use should not exceed the amounts according to the collective labour agreements for universities as per 1 July 2009, as set out in the table below. The amounts are listed in € on the basis of 1.0 FTE, including a mark-up to cover social insurance premiums

(as well as redemption of retainer risk and extension due to illness). The amounts correspond to an initial pay scale of 11.10 for a university lecturer, 13.7 for a senior university lecturer and 17.7 for a professor.

position-->	University lecturer	Senior university lecturer	Professor
duration of the appointment			
1 year	86,180	106,272	147,215
2 years	174,681	215,404	298,394
3 years	265,564	327,475	453,642
4 years	358,893	442,562	613,069

Table C

The personal bench fee applies to PhD students and post-docs. Pursuant to the aforementioned NWO VSNU contract agreements, as per 1 July 2009 these amounts were listed in € on the basis of 1.0 FTE as:

position-->	PhD student	Post-doctoral researcher	Other personnel		
			MBO	HBO	University
duration of the appointment					
1 year	N/A	N/A	N/A		
2 years	N/A	5,000	N/A		
3 years	N/A	5,000	N/A		
4 years	5,000	N/A	N/A		