

Call for (pre)proposals for SmartSiP

SmartSiP is a program in which the key technologies System-in-Package and Embedded Systems are combined. SmartSiP, which is supported by STW in its Perspectief program series, hereby calls upon academic researchers in the Netherlands to submit new project proposals.

Aiming at a direct link between public research centres and the industrial world, SmartSiP projects should have at least one industrial partner that participates substantially in the research. The contributions of the industrial partners should add up to 25% if expressed in financial means.

Research themes

Three research themes are defined for the first phase of SmartSiP program. The essential of this program is to realize multidisciplinary innovation of SmartSiP via hardware and software co-design, thus to achieve breakthrough in the “melting pot” between hardware and software. For each of the research themes, 3–5 FTEs covering different disciplines are expected.

It is required that each project addresses at least one aspect of vertical integration to achieve the integral, multi-disciplinary ambitions of the program.

- Conceptual HW and SW building blocks for SmartSiP prototypes, especially in the light of multi-functional requirements.
- Multi-disciplinary methods and platforms for dependable SmartSiP co-design (reliability, testability, manufacturability, stability, robustness, maintainability, availability, safety, security, etc).
- Vertical integration between different design abstraction layers, in particular those addressing
 - the architectural gap between the application system layer and the SmartSiP system layer
 - the physical gap between the SmartSiP system layer and its physical realization.

Application fields

To develop knowledge and technologies to serve long-term needs of the potentially high volume, low cost and high value markets, the following application fields (but not limited to) are recommended for the SmartSiP program.

- Domotica
- Lifestyle
- Mobility and Logistic

The SmartSiP program aims at a niche between the current main initiatives in the field of embedded systems and System-in-package such as Point-one,

Holst Centre, ESI, Devlab, and others. In the program description a more elaborate description of this niche is given. It is important for any proposal submitted in this call to emphasize the distinction with current initiatives and/or how the proposal will strengthen adjacent work.

Budget

For this call a budget of M€ 5 is available which must be matched by the contributions of potential technology users (companies/institutes) to a total of at least M€ 6,25. The total costs of a project submitted under the SmartSiP program is maximized to M€ 1. Given the minimal 25% user contribution per project, a maximum of € 750.000 can be requested from STW per project. The users do not have to co-finance upfront in the program but should contribute in-kind (materials, equipment, facilities etc.) and/or financially in the project wherein they will participate.

Who can apply

Scientists employed by Dutch universities or scientific institutes recognized by NWO are eligible to submit a (pre-)proposal (see OTP-guidelines for eligibility criteria). Because SmartSiP is an interdisciplinary program at least two different research groups has to be involved in one project. From the (pre)proposal the multidisciplinary approach must be clear.

Proposals and selection

The selection of proposals will be done in two steps: a call for pre-proposals and an invitation to the applicants of pre-proposals to submit full proposals. The pre-proposals will be evaluated by the Program Committee. The STW board will decide on the funding of the full proposals.

Funding

Projects must be explicitly multi-disciplinary. Project grants will cover:

- personnel costs (including PhD, post doc positions, positions for technical assistants)
- material costs (including national travel costs)
- international travel costs
- costs for equipment

The institution(s) of the applicant(s) ensure(s) the required infrastructure, the supervision and fitting into the research program of the research institute. SmartSiP may verify this with the Dean or the Executive Board of the institute.

The expertise required for the research must be available at the requesting institute(s), so that external consultants will not be necessary. If one co-operates

with institutes that cannot apply for SmartSiP funds, for example TNO or a foreign university, these parties take care of their own funding.

How to submit?

In order to minimize the time needed for writing and evaluating the proposals, it is compulsory to submit a preliminary proposal. All pre-proposals must be written in accordance with the formal guidelines. Only pre-proposals written in English and in accordance with the guidelines will be accepted for evaluation. Pre-proposals should be send by email to STW (info@stw.nl). Pre-proposals should be submitted to STW before June 25, 2007 . Pre-proposals will not be accepted after this deadline.

Pre-proposals

Pre-proposals should contain a short description (3 A4) of the proposed research, utilization paragraph and estimated budget. The proposal should make clear which potential users will contribute to the project. Support letters are optional for the pre-proposals but can be included (letters of intent are accepted). The pre-proposals will be ranked by the program committee on the basis of how well they fit within the scope of the program. The members of the program committee will first assess the pre-proposals individually before being discussed plenary in the committee. The program committee will advise the applicants 1) to submit a full proposal or 2) to adjust the proposal so that it would fit better into the program or 3) not to enter the subsequent selection procedure.

Full proposals

Full proposals must consist of a detailed description of the expected results, planning of the research and a utilization paragraph. The utilization paragraph should include the important industrial challenges that will be solved, the time frame to implementation and the expected bottle-necks during the implementation. Companies and institutes, which will potentially contribute, should be involved bottom-up during the preparation of the proposal.

The full proposal will be evaluated individually by experts (referees) and ranked by an independent jury of about eight (inter) national expert of universities (no applicants of this program) and industry. A full proposal will be evaluated only if it is preceded by a pre-proposal. The decision of the STW board will be based on the ranking by the jury and the advice of the program committee. The program committee advises on the cohesion between the project proposals and their fitting in the program.

The guidelines for full proposals are based on the "Open Technology Program (OTP)" with as the main difference that the technology users (companies/institutes) should contribute for at least 25% of the total project cost. The proposals should therefore be accompanied by a 'letter of participation' in which their contribution has been made explicit and in which details are given on what, when and how these contributions will be made available. For more details see "richtlijnen voor het open technologieprogramma (www.stw.nl)".

Time schedule SmartSiP proposals

Call for pre-proposals (3 A4)	Friday 25 May 2007
Deadline pre-proposals	Monday 25 June 2007
Notification to applicants about pre-proposal: positive / negative advice to submit full proposal	Monday 9 July 2007
Deadline full proposals	Friday 21 September 2007
Start review by experts	Friday 5 October 2007
Deadline protocol	Friday 2 November 2007
Ranking by Jury ready	Friday 30 November 2007
Advice Program Committee to STW board ready	Friday 7 December 2007
Proposal for funding send to STW-board	Friday 14 December 2007
Decision by STW board on funding plus notification to applicants	Friday 21 December 2007

Appendices

Annex 1: The pre-proposal

For future reference only:

Annex 2: The full proposal
Annex 3: Assessment and selection criteria
Annex 4: Assessment and selection procedure
Annex 5: Utilisation
Annex 6: Procedure after granting

Annex 1. The pre-proposal, deadline June 25, 2007

The project outline - which must not exceed 3 pages – should be written in English. The structure must be as follows:

1. Title
2. Names and addresses of the applicants
3. Expertises of the applicants and the objectives to increase these expertises
4. Fit within the themes of the program
5. Spearheads of the project
6. Concise description of the planned research. At least a description should be given of the expected results and the implementation thereof in industry
7. Names and addresses of the industrial partners of the project, if possible the names of the contacts within the companies
8. Support and involvement of the industrial project partners to this research project (qualitatively and quantitatively)
9. Preliminary budget
10. References.

Upon receiving a pre-proposal STW will assess its susceptibility. Next the program committee will assess the fit within the research program and its themes. Each member will give marks between 1 and 9 for the fit to all proposals. Then, the PC discusses all pre-proposal and marks. The PC will shortlist successful applicants and invite them to submit a full project proposal.

Annex 2. The full project proposal, pages below for future reference only

Format of the full proposal

STW receives your proposal preferably by e-mail in doc, pdf, or ps format.

- ◆ *Mention on the front page 'SmartSiP' in the upper left corner*
- ◆ *The maximum length is 12 (twelve) pages of A4*
- ◆ *The proposal is written in English.*

Administrative data

On maximally half a page you should provide:

- ◆ *Title. The title of the project has a maximum of 225 characters. For publicity purposes, a short, non-technical title or acronym is required as well.*
- ◆ *Name, address, phone number, fax number and e-mail address of the applicants and possible co-applicants and the telephone number of the secretary.*
- ◆ *STW sends the official correspondence to the main applicant. This is the first applicant mentioned. STW assumes the main applicant will have the supervision on the project. He or she becomes the project leader and bears the final responsibility for the execution of the research and the utilisation plan.*
- ◆ *Applications elsewhere. If support has been applied for elsewhere, you should give the status of this application at the time of submission.*

The project description

1. Summaries

The summaries of your project should be clear to those active in the field. At least the following subjects should be included:

Research

Summarise in half a page the context, problem statement, research method and expected results.

Utilisation

Summarise also in half a page the utilisation of the expected results. Provide everything the review committee must know about the utilisation: the chosen approach, the chosen partners and the way results will be brought into practice.

2. Composition of the group

The current group

Describe in half a page the composition of the team (academic and industrial) that will perform the research as well as the reason this team is fit for this research. Indicate the supervisors of the project, the proposed staff, and how the tasks will be divided.

Available infrastructure

This information includes available laboratory room and equipment.

Candidate researchers

In case candidates for the proposed staff positions are already known, you mention them here. Give a short explanation of their suitability.

3. Scientific description

In this section of maximally four pages an expert in the field should find all information to assess the quality of the proposed research. Treat the following subjects:

Contents of the research

Provide the scientific objectives, the starting-points and the substance of the project. Describe the methods and techniques you will apply, the available knowledge in the team, the knowledge to be developed, and the instruments and models you will use for this.

Required personnel and equipment

Provide motivations for staff and equipment and possible other requirements for the research.

Time schedule and allocation of tasks

Describe the proposed course of the research over the years and how the different parts must interact. You give decision points (milestones) and moments research results are expected (deliverables). Further, you indicate which partner will perform which tasks.

After acceptance of a FPP, STW will ask for a so-called "project plan" which should contain a more detailed planning and budget.

Connections with other research

Mention similar research that is performed elsewhere, either in the Netherlands or in the rest of the world. Describe the relation with your own research and the contacts with these groups (or the plans to establish them).

Outreach plan

In the outreach plan you describe the transfer of knowledge resulting from the project to other target groups than the scientific community and users group. The outreach plan addresses e.g. students, scholars, technology-oriented people in industry, technology press, et cetera.

4. Utilisation plan

The utilisation plan must be clear to those with general knowledge of the application domain.

The challenge from the practice and the proposed solution

Your research will address concrete problems with not-yet-existing solutions. Indicate the industrial relevance of this problem and the impulse this research gives towards the solution. Indicate which steps you will take to bring the research results into actual practice. Provide details for assessment of the feasibility and the conditions for successful application.

The users committee

All SMARTSIP projects have a "users committee". For further information on this you are referred to Annex 5 and to the SMARTSIP website. Mention the contact persons from companies and organisations that already accepted invitations to join the users committee, or that are willing to co-operate in another relevant way to realise utilisation of results.

Past performance on utilisation

Indicate the past successes that the academic team achieved in bringing academic research results into industrial practice, in relation with SMARTSIP or otherwise.

5. Contracts and patents

If there are any contracts relevant to the proposed research project, these should be mentioned here. Also provide patent search results, or the reason why such a search is not necessary for your proposal. Indicate if you have patents or running patent applications in the field of the research. This section takes maximally half a page.

6. Budget

In the main document you find a general explanation on which costs are considered for financing by SMARTSIP and which are not. All amounts are without BTW (VAT). The length of this section is at maximum one page.

- ◆ **Personnel**

You can apply for temporary staff: PhD-students, post-docs or technicians. Staff is appointed by the executive institution. The actual appointment is subject to prior written permission of STW. STW may withdraw a grant if vacancies are not filled within a year after granting.

- ◆ **Materials**

The costs of office and laboratory goods, small instruments and appliances must be specified here. Internal travel expenses of the project are also part of this budget.

- ◆ **External travel expenses**

These are costs for travel and subsistence for congress visits abroad for the project.

- ◆ **Investments**

These are costs for necessary equipment and other investments for the project.

- ◆ **Contributions of partners**

Provide financial and technical (staff and material) contributions that the partners bring to the project. After

granting SMARTSIP will invoice the financial contributions and add them to the corresponding credit of the project.

◆ **Overview of the total project costs**

Present a table with the planning of the staff appointments and the budgets per project year. Use the above mentioned headers. The partner contributions must be specified separately. The total project costs are the costs for SMARTSIP as well as the contributions of the partners.

7. Literature

In maximally two pages list all relevant and publicly available publications of the participating parties of the proposal, as well as relevant publications of others.

9. Key words, abbreviations and acronyms

Appendix. Potential referees

List four (inter-) nationally renowned referees that could review your proposal.

Appendix. Confirmation letters, see item 8.

These confirmation letters written by competent partner authorities, officially state their technical and financial contributions.

Annex 3. Assessment and selection criteria

Full proposals will be evaluated on scientific quality and utilization perspective.

Scientific quality

- Originality and innovative character of the proposal
- Expected impact on the scientific community
- Research method
- Time schedule
- Budget
- Infrastructure
- Past performance of the applicants.

Utilization

- Potential economic impact
- Contribution to the development of applied knowledge;
- Impact on utilization if the project is carried out successfully;
- Different steps needed (time path) to utilize the results;
- Chance on patents and/or know how agreements.
- Participation of users

The program committee will use the following considerations to evaluate if the proposals fit the framework of the program:

- How well do the goals of the project fit within the ambition of the SmartSiP program. Do the expected results meet the industrial needs in the long term (2011-2013)?
- To what extent does the proposal fit within the research themes of the SmartSiP program?
- Does the program strengthen the SmartSiP expertise in the Netherlands in general and of the participants in the project in particular?
- To what extent is the project proposal multidisciplinary? What are the positive effects from the cooperation between the embedded system and system-in-package fields?
- Do the proposals overlap each other and if so, what are the consequences for the funding?

Annex 4. Assessment and selection procedure

Check of the project proposal by STW

The SmartSiP office confirms the receipt of every proposal. A general check is performed whether or not the proposal satisfies all requirements as mentioned in this document. In case of doubt the office will contact the applicant.

Review by referees

SmartSiP presents the proposal to a number of experts in the field of the proposal. These referees are from the scientific community, knowledge institutes and relevant industry. They will review the proposal on the basis of criteria for scientific quality, utilisation and fit within the program and themes of the tender. These criteria are stated in Annex 3. Per project at least four referees will be asked for comments.

SmartSiP will combine the comments of the referees in a protocol. In this protocol the comments of the referees are anonymous. The applicant can make a substantiated request to exclude particular referees from the review procedure.

Reply by the applicants

STW will send the protocol to the main applicant requesting to react to the comments of the referees. The applicants should react to the protocol in a way it is clear to which comments they are referring. Moreover, they can add possible project changes to the protocol in such a way that it is clear which comments have resulted in which changes in the proposal.

Assessment by the SmartSiP jury

The procedure consists of two rounds. In the first one the jury will give marks for every project proposal: one for scientific quality, one for utilisation. Jury members may add clarifying comments to their marks. STW will list the averages, variances and comments per criterion for every proposal as input for the next round. The jury will discuss the outcome of the first round in a plenary session. After this discussion, the members of the PC may adjust their original scores individually in a second round. Based on the resulting order, the jury will formulate an advice for granting to the board of STW. This advice is input for the program committee as well.

Assessment by the program committee

In parallel, the program committee will assess the fit of the projects in the framework of the program. Program committee members will give marks for the fit. These marks and the advice of the Jury are input for the formulation of the advice of the program committee on the portfolio of projects that should be granted.

The STW board will take the final and official decision on the project proposals based on the two advices.

Possibility of appeal

The applicant can appeal against a decision of the steering group by sending an objection letter to the General Board of NWO within six weeks after the date of the granting or the rejection letter.

Annex 5. Utilisation

A very important aspect is the utilisation of the project results in industrial practice. Two mechanisms exist here: partners and users.

Partners

Partners are companies that participate actively in the project execution by means of financial or technical (material and/or staff) support. The contributions of the project partners are an integral part of the project and are stated explicitly in the project proposal. Confirmation letters of the partners are attached to the project proposal. Partner contributions are the main indication for the importance of the research to the partners and for their intention to utilise the results. Therefore partners are seen as users by definition.

Users

Users represented interested parties that can potentially use the project results. They are allowed to take knowledge of the SmartSiP and results of the research performed. They can be companies, authorities, research institutes, but also consumers or end-users. Users help to make sure that the research is performed as should be and to justify grants from the public sector. For protection of the intellectual properties of the partners it may be necessary for the users to sign a non-disclosure agreement.

The project proposal should mention potential users.

The users committee

SmartSiP research is funded largely from public resources. Therefore a proper inspection of the progress and the effectiveness of the research is required. Moreover the knowledge from the research should be transferred to the community in an optimal way. Therefore, SmartSiP demands for all research projects a Users Committee. Apart from partner representatives, this committee will consist of the users mentioned before and one representative of the program committee. The users committee is composed by the project leader in consultation SmartSiP. Exclusion of users from the users committee is only possible on explicit, substantiated request of an (industrial) partner that delivers a significant contribution to the project. The users committee will meet every half a year.

Knowledge management

Knowledge management is the regulation of the property, the protection and the exploitation of knowledge. Partners and members of the users committee are first in line for gaining knowledge from the results of the research, but they have no rights to exploit or commercialise this knowledge. To gain such rights a "reasonable compensation" has to be provided.

A well-known and generally accepted measure for knowledge protection is the request for a temporary ban on the publication of particular results. This may be required for e.g. the submission of a patent.

Annex 6. Procedure after granting

During the course of a project the following procedures apply. Extensive information is available in the 'Aanwijzingen voor de projectleider'. This document will be enclosed in the letter awarding the grant. It is also available from the SmartSiP office.

Granting

The main applicant becomes the project leader, unless otherwise indicated in the project proposal. After granting, the project leader obtains a number of documents in which the legal and financial conditions are stated. The grant is available only after these documents have been signed and returned to the SmartSiP office.

Initially, the credits for materials, travel and investments are granted only for the first two years and the staff is granted only for the first three years. SmartSiP reserves the remaining budget for the "Request for project continuation" after two years.

Project plan

After granting the project leader should write a project plan as an appendix to the proposal, containing a more elaborate planning and task scheduling. The project plan contains a rolling forecast: At least once a year and whenever necessary the project plan is adapted to the situation. The next year is planned with most detail. The project plan is written together with the partners and is presented to SmartSiP as well as the users committee. Guidelines for the project plan are given in the 'Aanwijzingen voor de projectleider'.

The commitments of the project partners to the execution of the project as put forward in the project plan form a project contract between the partners and SmartSiP. A detailed division of tasks is given.

Start of the project

The credits are available from the moment that the abovementioned documents are received by SmartSiP. The start date of the project is the date of the appointment of the first staff member. Usually, this is not the date of granting.

Users committee en reporting

Approximately six months after the start of the project the users committee will meet for the first time. Hereafter, the committee will meet twice a year to discuss the progress. The users committee will receive all scientific publications for approval prior to publication. They will also receive all progress reports.

The project leader reports semi-annually on the progress of the research to the SmartSiP office. The representative of the program committee reports to the program committee on the progress of the project in terms of issues and recommendations.

Continuation of projects

For projects that last for three years or longer, the project leader must submit a continuation request one year and a half after the start of the project. To decide on the continuation SmartSiP will be advised by the PC representative in the users committee.

Termination

Termination of projects before the official final date is possible if the commitments are not fulfilled (anymore) or if the scientific quality of the research or utilisation is below the required level.