

PCP Competition: Supporting Independent Living for the Elderly through Robotics (SILVER)

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Authority: Technology Strategy Board (UK)

The TSB is the Authority that is executing the PCP on behalf and in the name of the group of SILVER contracting authorities listed on this page.

Group of SILVER contracting authorities

City of Eindhoven (the Netherlands)
 City of Odense (Denmark)
 City of Oulu (Finland)
 City of Stockport (UK)
 City of Vantaa (Finland)
 City of Västerås (Sweden)
 Region of Southern Denmark (Denmark)

In cooperation with

AALTO (Finland)
 BRAINPORT (the Netherlands)
 Forum Virium Helsinki (Finland)
 NL Agency on behalf of the Ministry of Health, Welfare and Sports (the Netherlands)
 Technology Strategy Board (UK)
 VINNOVA (Sweden)

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1. Invitation to Tender

This Invitation to Tender should be read in conjunction with other documents associated with this SILVER PCP. These and all associated documents can be downloaded from www.silverpcp.eu.

In this PCP the **Technology Strategy Board (UK)** will act as the Authority on behalf and in the name of the group of contracting authorities for a cross-border group of SILVER contracting authorities.

Summary of the PCP SILVER Challenge

Interested legal entities are invited to tender for development project contracts in this PCP with the aim to develop new solutions addressing the lack of new innovative robotics solutions to make elderly people more independent from professional homecare, as outlined in the SILVER_02 Challenge Brief:

“The main goal of the SILVER challenge is to develop new innovative robotic solutions that target assisting the elderly and those caring for them with personal activities of daily living. These solutions are not yet on the market, but can be developed and tested within the SILVER PCP period of 2-3 years. These robotics solutions will be able to take over all or part of the work of care givers.”

The Challenge Brief contains information on the SILVER challenge and expected outcomes of the projects.

If a tender is submitted by a consortium that does not in itself constitute a legal entity, all consortia members shall sign the tender and, if applicable, the contract, making them jointly and severally liable.

When tendering for this call, bear in mind that the tendered price should reflect the fact that the intellectual property rights stay with the contractor as provided for in the contract.

Time Frame, Impact and Budget

Tenderers should aim at a market introduction of their new solution a maximum of 2-4 years after the end of the PCP. In 2020 the new solutions should make it possible to care for 10% more people with the same amount of staff. In total 2,150,000 Euros is reserved for the PCP contracts.

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An introduction to the PCP

Pre-Commercial Procurement (PCP) is a competition-like procurement method which enables public sector bodies to engage with innovative businesses and other interested organisations in development projects, to arrive at innovative solutions that address specific public sector challenges and needs. The new innovative solutions are created through a phased procurement of research and development contracts to reduce risk.

A PCP aiming at contracts for research and development services falls outside the scope of the two EU procurement directives; see Utilities Directive 2004/17/EC, Article 24 (e), and Public Sector Directive 2004/18/EC, Article 16 (f). Research and development services will be financed at market price, thus providing business with a transparent competitive and a reliable source of early-stage financing, and the opportunity to establish an early customer, for a new solution. Since PCP focus on specific identified needs, the chance of exploitation of developed solutions increases.

The PCP method is suited to tenderers of all sizes, including small and medium-sized ones, as the contracts are of relatively small value and operate on short timescales.

In a PCP at least 50% of the value of what is procured must be R&D services, not products or supplies¹. Research and development (R&D) can cover activities such as solution exploration and design, prototyping, up to the original development of a limited volume of first products or services in the form of test series. Original development of a first product or service may include limited production or supply in order to incorporate the results of field testing and to demonstrate that the product or service is suitable for production or supply in quantity to acceptable quality standards. R&D does not include commercial development activities such as quantity production, supply to establish commercial viability or to recover R&D costs, integration, customisation, incremental adaptations and improvements to existing products or processes.

In this PCP, tenders will be selected by an open competition-like procurement process and awarded research and development contracts. Selected contractors will retain intellectual property generated from their projects, with certain rights of use retained by the Authority and the group of SILVER contracting authorities.

Framework agreement and budget

This PCP will result in framework agreement with three phases: *Phase 1 Solution Exploration; Phase 2 Prototyping; and Phase 3 Test Series.*

¹ According to the OECD Frascati Manual, “the term R&D covers three activities; basic research, applied research and experimental development [...] Basic research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view. Applied research is also original investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific practical aim or objective. Experimental development is systematic work, drawing on the existing knowledge gained from research and/or practical experience, which is directed to produce new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produces or installed. R&D covers both formal R&D in R&D units and informal or occasional R&D in other units. For further discussion on the definition of R&D, see OECD’s Frascati Manual (latest edition: 2002: *Frascati Manual, Proposed Standard Practice for Surveys on Research and Experimental Development*).



The Authority will sign a framework agreement and a specific contract for Phase 1 with a maximum of 8 contractors that will start with Phase 1. Following the completion of Phase 1, the Authority will make a call-off for R&D services for Phase 2 from the contractors that have successfully completed Phase 1. The Authority will award Phase 2 contracts to a maximum of 4 tenderers. Upon completion of Phase 2, a corresponding call-off for Phase 3 will take place, aiming at awarding 2-3 Phase 3 contracts. The assessment criteria and weighting is set out in this SILVER_01 Invitation to Tender. The criteria and evaluation method used for initial selection of bids at the start of the PCP will also subsequently be used by the Authority for the awards of contracts for subsequent Phases 2 and 3 though elaborated or developed in further detail for the specific purposes of each such Phase.

- Phase 1 is intended to demonstrate the feasibility of proposed concepts for new solutions. The contracts placed for Phase 1 will be for the duration of 6 months and a maximum price of 40,000 euros (excluding VAT). A budget of maximum 350,000 Euros (incl. VAT) is available for a maximum of 8 projects in Phase 1. The number of awarded contracts depends on the price of the tenders and the required minimum score of the tenders.
- Phase 2 is intended to develop and evaluate prototypes or demonstrators from the more promising concepts in Phase 1. Phase 2 is dependent upon successful completion of Phase 1 and contracts may be awarded to contractors that have successfully completed Phase 1 and whose Phase 2 bid is selected for Phase 2. It is anticipated that the budget will be 720,000 Euros (including VAT) for a maximum of 4 projects.
The contracting authorities will test the solutions coming from the pilots. In Phase 2 of the project this will likely be done for any one pilot in a single centre (e.g. the living labs in the Region of Southern Denmark). More information on the testing location(s) will be made available during Phase 1.
The contracts placed for Phase 2 will be for the duration of 12 months. The number of awarded contracts depends on the budget, the price of the tenders and the required minimum score of the tenders.
- Phase 3 is intended for the original development of a limited volume of first products/ services (test series). Contracts for Phase 3 may be awarded to contractors that have successfully completed phase 2 and whose phase 3 bid is selected for phase 3. For this phase, it is anticipated that a budget of 1.080,000 Euros (including VAT) is available for a maximum of 3 projects.
In Phase 3, testing will be done in a real environment. The contracting authorities will test the solutions coming from the pilots in all the procuring countries. In this way the SILVER consortium can ensure that any locally required differences (e.g. to cope with different languages or local building regulations) can be covered whilst not burdening the pilots early on by having to cope with multiple testing centres. The final decision on which procurer will take responsibility for testing which project will be taken before Phase 3 commences. In this way it will be easier to match the needs of the pilot projects to the testing capabilities / facilities of the procurers.
The contracts placed for Phase 3 will be for the duration of 12 months. The number of awarded contracts depends on the budget, the price of the tenders and the required minimum score of the tenders.

The framework agreement sets out the framework conditions (rights and obligations between contracting authority and contractors) for the entire duration of the PCP covering phase 1, 2 and 3. The framework agreement remains binding for as long as (for the duration of all those phases for which) contractors remain in the competition. Tenderers should therefore in their offer for this invitation to tender not only state their detailed offer for phase 1, but also state their goals, and outline plans (incl. price conditions) for Phases 2 and 3, as an explicit part of the path to full commercial implementation.

The budget available for Phase 2 and 3 may eventually be higher than mentioned above, depending on how many contracts will be placed in Phase 1 and Phase 2.

The payments are firm and fixed and in Euros, i.e. not adjusted for foreign exchange and / or index, or in any other way. All prices **shall** be stated in Euros.

Authority and the group of SILVER contracting authorities

The **Technology Strategy Board**, established in North Star House, North Star Avenue B1, SN2 1JF Swindon (United Kingdom) is an Arm's Length Body under the Department of Business Innovation and Skills in the United Kingdom. Its role is to promote innovation in the UK and act as the Innovation Agency for the UK. In this PCP the **Technology Strategy Board** will act as the Authority that carries out the PCP procurement on behalf and in the name of a cross-border group of SILVER contracting authorities with the following parties:

- **City of Eindhoven** is the 5th largest municipality in the Netherlands. The City region Eindhoven has over 725,000 inhabitants and is a trend-setting centre of innovation and technology. The City of Eindhoven itself is home to a population of more than 200,000 inhabitants of which 7,7% is older than 75 years. In 2030 9,7% of the population will be over 75. With the changing landscape of social policy and, more in particular, healthcare provision in the Netherlands, the city of Eindhoven, like all Dutch local authorities is facing a double challenge of adapting to implementing ever more tasks in the fields of social inclusion and healthcare with ever smaller budgets, due to the budget cuts. The City of Eindhoven takes on this challenge through, among others its "WijEindhoven" programme in which the city adopts a fundamentally different approach putting the citizen, as service receiver, at the centre instead of the local authority, as the one offering the services, thereby offering better services with less money.
- **City of Odense** (is the 4th largest municipality in Denmark in terms of population size. In this project the municipality will be represented by the Department of the Elderly and Disabled responsible for a range of services for pensioners and the handicapped in Odense Municipality. Odense Municipal Eldercare and Health units are public operating units with more than 3,000 employees providing around the clock care to close to 10,000 citizens each year and has an annual budget of 135 million Euros. Odense City Council has a strategic focus on welfare technology, which is based in the regional vision to create an international powerhouse for the development, implementation and dissemination of welfare technologies in health and social care.
- **City of Oulu** is the capital of northern Finland. The Oulu Region has over 200,000 inhabitants and it is the fastest growing region in Finland. The City of Oulu itself has over 137,000 inhabitants. Oulu has the youngest population in Finland. The average age is 34,5 years. The greatest growth in the population is, however, in the group of the over 85-year-olds. The idea in elderly care is that technology supports both the client and the caretaker. Oulu is an innovative, future oriented developer city. New technologies and products are constantly tested and the best among them are brought into use. The elderly are actively involved in the testing processes.
- **City of Stockport** is home to a population of 284,600. Stockport has an ageing population and current population estimates place the borough's older population above the UK and North-West averages. By 2019, it is estimated that 20.3% of the Stockport population could be aged 65 and over. This amounts to an additional 9,200 people of this age that may require health and social care services. The incidence of dementia within this ageing population is also expected to significantly increase, having profound implications for the number of people that require support.



- **City of Vantaa** is the fourth biggest town in Finland and a part of the Metropolitan area. Vantaa aims to become increasingly international in order to provide its people and businesses with a better environment in which to live and operate. Participation in international forums helps the city to develop new services for its residents and discover ways to improve existing operations.
- **City of Västerås** is one of Sweden's 290 municipalities and a purchaser of health care for the elderly. Through innovation, the city aims to find productive ways of working and interacting. This means that Västerås is increasingly a part of a larger context; a part of the Stockholm Malaren region, of Sweden, of Europe and the world. Västerås aims to be open to new ideas, find wise forms of interaction and make technical conquests.
- **Region of Southern Denmark** (RSD is one of five regional health authorities in Denmark, responsible for providing health care at hospitals and integrated care to patients in cooperation with municipalities. The largest city in RSD is Odense. In SILVER, RSD is represented by Southern Denmark Health Innovation, which has been established by the Regional Council to focus on welfare technology, health care innovation, public-private partnerships and telemedicine. Southern Denmark Health Innovation also includes the project, Public-Private Innovation and Welfare Technology, which has participation from all five Danish regional health authorities, a large number of municipalities, private enterprises.

Until 7 days prior to the deadline for bids for Phase 1 per country of the SILVER contracting authorities, one new procuring entity may enter the group of SILVER contracting authorities and become an equal partner in the group of SILVER contracting authorities with the same rights as the other contracting authorities. Tenderers and contractors will be immediately informed about changes in the group of SILVER contracting authorities.

Administrative instructions

Tenders that do not comply with the administrative instructions will be excluded from further participation in the PCP.

Tender submission

All tenders must be submitted in accordance with the directions on the SILVER website. Examples of all the forms are provided on the website in the specific competition area.

To enter into this SILVER PCP competition tenderers will be required to register via this competition website. This will trigger an email containing a username and password for the secure upload facility, along with a unique SILVER_04 Tender Form and number. Please note the typical turnaround time is 2 working days and so there may be a short delay in receiving login details once registered.

Tenderers are strongly advised to read the SILVER_03 Guidance before completing the SILVER_04 Tender Form.

Please note: The last date to register in order to get access to the secure upload facility and the unique SILVER Tender Form is 1 week prior to the deadline for tenders.

Tenderers shall have been registered and tenders have been received at no later than the deadline for tenders at 13.00 hrs. CET or 12.00 hrs. GMT, see next section "Time schedule for entering the SILVER PCP competition".

Tenders received after the deadline for tenders for tenders will not be evaluated.

Please do not send completed tenders by post or any other means other than as directed.

Tenders will be assigned a reference number. It should be noted that tenderers will need it for all subsequent enquiries. If the tenderer is successful, this reference number will stay with the project for its duration.

Time schedule for entering the SILVER PCP competition

<i>Date</i>	<i>Activity</i>
25 February 2013	Tendering period opens
March - April 2013	Information meetings
5 June 2013	Deadline for registration
12 June 2013 at 12.00 UK or 13.00 CET	Deadline for tenders
13 June – 26 June 2013	Assessment by experts and decision panel
12 July 2013	Tenderers notified of decision Phase 1
Shortly after 18 July 2013	Framework agreement sent

Preliminary time schedule after contracting PCP Phase 1

<i>Date</i>	<i>Activity</i>
5 February 2014	End report Phase 1 deadline and deadline for tender Phase 2
6 February – 19 March 2014	Assessment by experts and decision panel
2 April 2014	Tenderers notified of decision Phase 2
Shortly after 3 April 2014	Contracts Phase 2 sent
1 April 2015	End report Phase 2 deadline and deadline for tenders Phase 3
2 April – 13 April 2015	Assessment by experts and decision panel
27 May 2015	Tenderers notified of decision Phase 3
Shortly after 28 May 2015	Contracts Phase 3 sent
25 May 2016	End of Phase 3

The Authority reserves the right to adjust the time schedule, if necessary. This will be communicated timely with tenderers.

Communication and questions

When the tender period opens the SILVER_05 Q&A, a Questions and Answers document, will be available at the SILVER website.



A contact point has been set up to answer questions from tenderers that are not covered in the Q&A, or need elaboration. All questions concerning the registration, the PCP challenge, the scope and the tender process should be addressed in writing to the contact point:

- E-mail: competitions@silverpcp.eu

Questions or requests for clarification concerning this Invitation to Tender must have been received by the above contact point not later than seven working days prior to the deadline for tenders for the SILVER tender. After this date, no further dialogue will be entered into. Please quote the tender reference when contacting the contact point to help them answer the query.

A summation of all questions and answers addressed to the contact point will be added to the SILVER_05 Q&A at the SILVER website. The updated Q&A will also be distributed to all tenderers who have registered for the SILVER PCP tender. The identity of the questioner will not be disclosed.

For technical assistance please call

- Telephone: +44 (0)300 321 4357

Conformance to Contract Agreement

An agreement will be entered into only by means of a written contract, signed by both parties.

By submitting a tender, the tenderer accepts to be bound by the undertakings and conditions of the SILVER_06 Framework Agreement.

The tender may not contain any reservation in relation to the conditions of the Contract Agreement. Tenders shall be based on the conditions contained in the Contract Agreement and the other contract documents.

Subcontractors

The tenderer shall in his tender state which parts of the scope of the procurement contract, if any, he intends to subcontract other suppliers or contractors for.

A tenderer that wishes to rely on the resources of any subcontractor for the fulfilment of the requirements for participation in the SILVER PCP (and, where, applicable, an awarded contract), should, upon the request of the Authority, in a satisfactory manner demonstrate that these resources will be available to him. One way of demonstrating this is to submit a written commitment from such subcontractor showing that the resources of the subcontractor will be at the tenderer's disposal for the full duration of the contract.

If the tenderer needs to change subcontractors, these new partners will have to prove that they have at least the same competences as the subcontractors or partners they will replace and that they comply with all the other contractual conditions, rights and obligations that are in the framework agreement and specific contracts: e.g. complying with the place of performance conditions, respecting the same IPR conditions, the binding unit prices.



Validity of tenders

Tenders shall remain valid up to and including 90 days after the deadline for tenders.

Disclaimer

The Authority assumes no obligation, whatsoever, to compensate or indemnify the tenderers for any expense or loss they may incur in the preparation of their tenders (except as may follow from mandatory provisions of law). Furthermore, the Authority reserves the right to cancel the procurement e.g. if tender prices exceed allocated budgets of the authority or if prices are clearly disproportionate.

Exclusion criteria

A tenderer will be excluded from further participation in the SILVER PCP if it or any subcontractor on whose resources it relies upon in this procurement:

1. Is bankrupt or is being wound up, is under compulsory administration or is the subject of a composition or has indefinitely stopped its payments or is subject to a prohibition on conducting business,
2. Is the subject of proceedings for a declaration of bankruptcy, for an order for compulsory winding up or administration by the court or composition or any other similar proceedings,
3. Has been convicted by a judgment which has the force of res judicata for an offence relating to professional practice,
4. Has been guilty of grave professional misconduct and the procuring agencies can prove this, or
5. Has not fulfilled its obligations relating to social insurance charges or tax in its own country.
6. In some material respect has failed to provide information requested or provided incorrect information required pursuant to this invitation to tender document.

Tenderers shall explicitly assure that they are not subject to any of the exclusion criteria 1-5 above. Please see the SILVER_04 Tender Form.

If the Authority becomes aware that a tenderer, or a representative of the tenderer, or subcontractor, under a judgment that has entered into final legal force has been sentenced for a criminal offence listed below, such tenderer will be excluded from the PCP:

- Criminal offences referred to in Article 2 of Council Framework Decision 2008/841/JHA of 24 October 2008 on combating organized crime.
- Corruption as defined in Article 3 of Council Act of 26 May 1997 preparation on the basis of Article K.3.2 c Treaty on European Union, the Convention on the fight against corruption involving officials of the European Communities or officials of Member States of, and Article 3.1 Council Joint Action 98/742/JHA of 22 December 1998 adopted by the Council on the basis of Article K.3 of the Treaty on European Union, on corruption in the private sector.
- Fraud within the meaning of Article 1 of the Convention drawn up on the basis of Article K.3 of the Treaty on European Union for the Protection of the Communities' financial interests.

- Money laundering as defined in Article 1 of Council Directive 91/308/EEC of 10 June 1991 on measures to prevent the financial system for money laundering, amended by European Parliament and Council Directive 2001/97/EC.

Minimum requirements

The Authority requires that the tenders meet all the minimum requirements as listed below. If a tender doesn't meet one or more of these requirements, he will be excluded from this PCP.

1. R&D services

This procurement is carried out under the explicit exemption for R&D services under article 16(f) of the EU public procurement directive 2004/18/EC. Tenderers are asked to observe that the object of the procurement thus is restricted to cover research and development services (basic research, applied research, and experimental development), and not products or other supplies, or commercial development activities. Tenderers are therefore asked to observe that their price offer only includes items that are inseparable from and indispensable to deliver the R&D service that is purchased through the PCP contract.

Please see the section on 'price' in the tender form for more information on items that can be included in the price offer in addition to the labour price for executing the R&D activities needed to address the PCP challenge (e.g. the price of equipment needed to develop the prototypes or test products, the price for installing such prototype or test equipment on the procurer's premises for the duration of the test phase, the price of travel and accommodation to test sites). Please note that contracts providing more than only services are only still considered a public service contract if the value of the services (in this case the labour price for executing the R&D activities needed to address the PCP challenge) exceeds that of the products covered by the contract (e.g. equipment needed to perform the R&D service as explained above). For further examples of R&D services, please see the *Frascati Manual, Proposed Standard Practice for Surveys on research and Experimental Development* (OECD, latest edition 2002).

It is an absolute requirement that the services offered by the tenderer are within the scope of the above definition of R&D services. The tender shall contain clear information about the tenderer's intended allocation of monies paid by the Authority, in order to allow control of this requirement being fulfilled (that more than 50% of the contract value is attributable directly and exclusively to legitimate services). The tenderer accepts to provide additional such information upon request from the Authority, whether during the procurement period or during the contractual period. This requirement and these obligations on the part of the tenderer apply also, where applicable, for Phase 2 and Phase 3.

Possible other public financing

Tenderers are requested to declare other sources of public financing received in areas of work related to the scope of the SILVER PCP. In case tenderers have received or are receiving public financing that is subject to the State aid rules, offers shall be excluded in case award of a PCP contract would result in double public financing or accumulation of different types of public financing that is not permitted by the EU State aid rules.



2. Place of performance of R&D services

- For Phase 1 at least 60% of the R&D services shall according to the contract be performed within the EU Member States, or a country that is associated to FP7².
 - For Phase 2 at least 70% of the R&D services shall according to the contract be performed within EU Member States, or a country or a country that is associated to FP7.
 - For Phase 3 at least 80% of the R&D services shall according to the contract be performed within EU Member States, or a country or a country that is associated to FP7.
- The tenderer shall confirm that this contractual requirement can be honoured and fulfilled.

3. Compliance with national requirements

All research, developments and tests undertaken during Phase 2 and 3 must be compliant with national requirements concerning safety, ethics and healthcare regulation in place in the countries of the group of SILVER contracting authorities (Denmark, Finland, Sweden, the Netherlands and UK). The tenderer shall confirm that this contractual requirement can be honoured and fulfilled. Details of these requirements will be given before Phase 2 and 3.

4. Usable in the participating countries

The solutions must be usable in the countries of the Authority and the group of SILVER contracting authorities, i.e. Denmark, Finland, the Netherlands, Sweden and the UK and preferably all over the EU. And, if relevant, the solutions can easily be modified to communicate with local customer-information systems.

5. Robotics solution

It is an absolute requirement that the tenderer proposes an R&D service that results in a solution that meets the requirements, as mentioned in the brief. This solution must combine different technologies into a single system to deliver a robotic support for assisting elderly with personal activities of daily living (p-ADL) tasks as mentioned in the SILVER_02 Challenge Brief, in order to assist independent living of the elderly.

Pay attention to third party IPR and open source issues because since that will be part of the contract, see article 17.5 of the Silver_06 Framework agreement.

Excluded are tenders focussing solely on development of basic robotics components; communications tools and solutions simply interacting through a display or alerting the outer world on certain conditions.

6. Ethical aspects

It is an absolute requirement that the tenderer takes ethical aspects into account with his proposed solution.

Informed consent

Collection of personal or health related data should be avoided at all times. However, the tenderer may collect data on care receivers' satisfaction, by having them answer a

² see latest list of FP7 associated countries on http://cordis.europa.eu/fp7/who_en.html

questionnaire. The questionnaire must include the elderly giving their informed consent to participating in the study.

All care givers and receivers must participate on a voluntary basis and will be informed of the research, participation, data security and disclosure procedures. Should collection of data require governmental approval, the tenderer will ensure that the necessary steps are taken, and the required approvals are granted, before the data collection is started. Furthermore the tenderer will ensure that the data collection and studies will remain ethical.

Data protection issues

Tenderers collecting possible sensitive material or data will be required to sign non-disclosure agreements in Phase 2 and Phase 3.

Assessment of Tenders

The tenders will be evaluated as set forth below only after the next compliance check:

- if the tendering entity is not subject to any of the exclusion criteria.
- the requirements in the administrative instructions are met and
- all minimum requirements as mentioned in this invitation to tender are met, whereas compliance with the robotics definition will be assessed by robotics experts.

General assessment process

Tenders will be initially reviewed by a selected panel of experts. Each tender will be assessed by 5 experts with knowledge of elderly care, robotics and/or general business knowledge. Due to constraints with regard to time and resources, all tenders may not be assessed by all experts. In the preliminary evaluation, each tender will be assessed by at least 2 experts with knowledge of elderly care and at least 1 expert with knowledge of robotics.

Based on the experts' assessments, a preliminary ranking of the tenders is made. This preliminary ranking will subsequently be inspected and reviewed by a decision panel consisting of at least two individual independent experts, the Authority and the group of SILVER contracting authorities and / or persons assigned by these parties. The decision panel will monitor and safeguard that the assessments of all tenders are consistent and equal, and will have the authority to adjust or override the preliminary ranking and assessment. The decision panel will by unanimity make the final decision on which tenderers are to be awarded contracts.

The criteria and the method for evaluating the bids in Phase 2 and 3 will essentially be based on the criteria and the method used in evaluating the original tenders as set out below, but may be elaborated or developed in further detail within those frames.

Decision

Within 90 days after the final date for receipt of tenders, an award decision will be sent to tenderers, also containing the reasons for the decisions taken. Contracts will be sent shortly after that.

The Authority is committed to providing a high quality, responsive and accessible service. For tenderers that feel unhappy about the service they receive or that wish to make a suggestion about how the Authority might improve, the Authority has a complaints procedure.



Complaints submitted through this procedure should be concerned with the way in which a decision has been made or an action taken, rather than objections to the merits of the actual decision or action. More information on the complaints procedure can be found in SILVER_11 Decision notice.

Assessment criteria and weighting

The maximum score a tender can get in phase 1 is 350 points. Only tenders with the following minimum scores are eligible for a contract:

- 60% of the maximum number of points (210 points)
- 60% of the maximum number of points scored for the impact criterion (120 points).

The assessment criteria and their weighting per phase are listed below. The full scoring model for Phase 1 is found in the appendix at the end of this SILVER_01 Invitation to tender document.

Criterion
Maximum points

		Phase 1 (max 350)	Phase 2 (max 500)	Phase 3 (max 1300)
Impact on the challenge		200	250	680
I	The extent of how well the proposed idea/ solution/ technology meets the challenge as detailed in the Brief, and whether it will have the desired impact	40	40	80
II	Potential of the proposal to address future/ wider challenges in the challenge area in an innovative way (e.g. by developing or employing novel concepts, approaches, methodologies, tools, or technologies)	20	20	40
III	Amount of time saving the solution will realise = III.1 x III.2	40	80	240
III.1	Amount of time saving the solution will realise in a(n imaginary) city of 100.000 people according to the tenderer's calculations (in Phase 1 and Phase 2 detailed information will be provided to make more precise calculations in a real city)	20	40	120
III.2	Validity of the indicated time saving	multiplier (0, 1, 2)	multiplier (0, 1, 2)	multiplier (0, 1, 2)
IV	The extent of how usable (ISO ³ definition usability) the solution will be for the target group (care givers or care receivers)	40	40	80
V.1	The extent to which the approach analyses the economic and financial needs of the contracting authorities procuring the to be developed solution and whether it is a realistic analysis.	not assessed	50	200
V.2	The extent to which the approach demonstrates commercial feasibility, and whether it is a realistic commercialisation plan / route to market (In Phase 2 and 3 the following phrase will be added: "taking into account the analysis under V.1")	60	20	40

³ The international standard, ISO 9241-11 defines usability as: The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.

Criterion
Maximum points

Quality of the tender		100	100	200
VI	Validity of the technical approach that will be adopted	20	20	40
VII	The extent to which the tender shows a clear plan for the development of a working solution, and whether it is a reasonable plan to finish Phase 3 in time	20	20	40
VIII	Effectiveness of the project management	20	20	40
IX	The extent to which the tenderer and/or subcontractor shows or demonstrates to have dedicated the resources (e.g. human capital, equipment, etc.) necessary to perform the scope of the tender	20	20	40
X	The extent to which crucial risks (technical, commercial and other) to project success are identified, and how effectively these will be managed	20	20	40
		Phase 1	Phase 2	Phase 3
Price		50	150	420
XI	Formula for Phase 1. For tenders with prices between 20,000 – 40,000 Euros the scoring will be calculated with the following formula: points = 5 x [10 - (9/20,000)*(tender price - 20,000)] Tenders with prices below 20,000 Euros score the maximum points.	50		

Tender prices for the assessment **shall** be stated in euros currency, exclusive of VAT. Duties, custom fees, taxes or other charges, if any, **shall** be included in the tender price including VAT. The tenderer shall for Phase 2 and Phase 3 give an indication of the price in the Tender Form.

It is incumbent upon the tenderer who seek to obtain points to supply information which enables the scoring of the tender.

The scoring will be made according to an absolute scale, meaning that several tenderers can receive the same score and that the points a particular tenderer receives is not affected by the points other tenderers have received.

If two tenders are awarded the same number of total points in the evaluation process, the tender with the highest points on Impact will be ranked higher. If they are awarded the same number of points on Impact as well, the tender with the lowest price will be ranked higher. If they are awarded the same number of points on price as well, they will, if necessary, be separated by drawing of lots performed by two officers of the Authority, or – if requested by either of the concerned tenderers – before a public notary or a representative of the local Chamber of Commerce. This will also apply to awards made for Phase 2 and Phase 3.

Successful tenderers will be advised according to the published key dates and will be, if awarded a contract, expected to mobilise rapidly to start the project. It is important that Phase 1 projects start soon after the contract has been issued, so that all projects can be assessed fairly and move on to Phase 2 and Phase 3 concurrently and smoothly.

Assessment criteria Phase 2 and 3

The above criteria and evaluation method will also subsequently be used by the Authority in the calls for bids for Phase 2 and Phase 3, though elaborated and developed in further detail for the specific purposes of each such Phase.

In order to differentiate in the next phases between Business to Business and Business to Government, in phase 2 and phase 3 criterion V.1 will be added to the assessment:

V.1 The extent to which the solution is based on a realistic analysis of the economic and financial needs of the contracting authorities.

Criterion V.2 will be adapted as follows: The extent to which the approach demonstrates commercial feasibility, and whether it is a realistic commercialisation plan / route to market, *taking into account the analysis under V.1.*

Before the start of Phase 2 tenderers will be informed:

- what “economic and financial needs of contracting authorities” mean and what tenderers shall deliver in their tender for Phase 2 and 3.
- what formula for the price criterion will be applied for the next phases.

Confidentiality, publicity and information about the award

The principle of public access to official documents means that public documents and records (with a few exceptions) should be made available to whoever asks for them. The principle is balanced by the *obligation of professional secrecy*, that sets down that public authorities are obliged to protect business secrets of others, if disclosure may seriously harm their interests.

Experts, employees of the Authority and other persons contracted to aid in the tendering and award process will handle all information confidentially in accordance to above. Experts with a conflict of interest with one or more of the tenders will not assess these tenders.

Information from the tenders is confidential in accordance to above. However, the Authority will distribute and publish the following information about the tenders that are awarded with contracts:

- The name of the organisation
- Their location
- The title of the project
- A short summary of the project
- Contract value

The aforesaid award information will be sent to the contact information stated in the tender.

Tenderers should be aware that the Authority reserves the right to publish public summaries of the results of the PCP projects (Phase 1, 2 and 3), including information of the key R&D results attained and lessons learned by the Authority. Details will not be disclosed that will harm the legitimate business interest of the contractors involved in the SILVER PCP or that would distort fair competition on the market.



Distribution of IPR resulting from the project

R&D risks and benefits will be shared between contractors and the Authority in such a way that all parties have an incentive to pursue wide commercialisation and take up of the new solutions. Therefore, ownership rights of IPRs generated by a contractor during the PCP contract will be assigned to that legal entity.

The Authority and the group of SILVER contracting authorities in SILVER will be assigned a worldwide free and non-exclusive licence to use the R&D results for internal use. A call-back provision will ensure that IPRs that are not exploited within 4 years after the PCP project will return back to the Authority and the group of contracting authorities in SILVER.

The Authority and the group of SILVER contracting authorities in SILVER can request the contractor to offer licenses to third parties under fair and reasonable conditions with consideration of the rights of other third parties that do not accrue to the Contractor.

For specific information about IPR rights and obligations please see the Silver_06 Framework Agreement art. 17 and 18.

Judicial review

Any legal claim, or petition or application for judicial review, with regard to the present procurement procedure, whether before civil law courts or administrative courts, shall be made in England. By submitting a tender, the tenderer accepts the exclusive jurisdiction of English courts.

List of documents

The Invitation to Tender consists of the following documents:

- SILVER_01 Invitation to Tender (this document)
- SILVER_02 Challenge Brief
- SILVER_03 Guidance
- SILVER_04 Tender Form
- SILVER_05 Q&A
- SILVER_06 Framework agreement
- SILVER_07 Phase 1: End of Phase Report Form

The documents are all marked with the reference for this PCP: SILVER_xx.

Annex: Scoring Model

0. Compliance with robotics definition

I.	Tenders that are not compliant with the robotics definition in SILVER_02 Challenge Brief will not be assessed and will be excluded from this PCP.
0	Not compliant with robotics definition
1	Compliant with robotics definition

The scoring guide below gives indicative marks. Assessors are free to use the full range up to the maximum per question. Scoring will be made between 1 and 10 points.

1. Impact on Challenge

I.	The extent to how well the proposed idea/ solution/ technology meets the challenge as detailed in the Brief, and whether it will it have the desired impact. Based on the functional requirements and performance specifications in SILVER_02 Challenge Brief
	Scoring Guide
1	There is no indication that the proposal will meet the challenge
2	There is very little indication that the proposal is likely to meet the challenge
4	There is little indication that the proposal will meet the challenge
6	There is some indication that the proposal is likely to meet the challenge
8	There is indication that the proposal will meet the challenge
10	There is clear indication that the proposal is likely to meet the challenge

II.	Potential of the proposal to address future/ wider challenges in the challenge area in an innovative way (e.g. by developing or employing novel concepts, approaches, methodologies, tools, or technologies)
	Scoring Guide
1	The project shows no potential to address future / wider challenges in the challenge area
2	The project shows little potential to address future / wider challenges in the challenge area
4	The project shows some but limited potential to address future / wider challenges in the challenge area
6	The project shows potential to address future / wider challenges in the challenge area (including in particular novel, innovative approaches)
8	The project shows adequate potential to address future / wider challenges in the challenge area (including in particular promising new concepts, approaches, methodologies, tools or technologies)
10	The project shows very high potential to address future / wider challenges in the challenge area (including in particular innovative, showing use of novel concepts, approaches, methodologies, tools or technologies)

III.	Amount of time saving the solution will realise in an imaginary city of 100,000 people = III.1 x III.2
III.1	Amount of time saving the solution will realise in an imaginary city of 100,000 people according to the tenderer's calculations
	Scoring Guide
1	The tenderer calculates savings between 10 - 34 hrs a day
2	The tenderer calculates savings between 35 - 69 hrs a day
3	The tenderer calculates savings between 70 - 104 hrs a day
4	The tenderer calculates savings between 105 - 139 hrs a day
5	The tenderer calculates savings between 140 - 174 hrs a day
6	The tenderer calculates savings between 175 - 209 hrs a day
7	The tenderer calculates savings between 210 - 244 hrs a day
8	The tenderer calculates savings between 245 - 279 hrs a day
9	The tenderer calculates savings between 280 - 314 hrs a day
10	The tenderer calculates savings of more than 315 hrs a day
III.2	Validity of the indicated time saving
0	Not valid
1	Partly valid
2	Valid

IV.	The extent to how usable (ISO⁴ definition of usability) the solution will be for the target group (care givers or care receivers)
	Scoring Guide
1	There is no information given on the usability
2	The usability is poorly described and there is no indication that it takes into account the experience and capability of the target group
4	The usability described is unlikely to fit with the experience and capability of the target group
6	The usability is valid but may not sufficiently fit with the experience and capability of the target group
8	The usability described is valid and is likely to fit with the experience and capability of the target group
10	The usability described is highly valid and is likely to fit with the experience and capability of the target group

⁴ The international standard, ISO 9241-11 defines usability as: The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.

V.1	The extent to which the approach analyses the economic and financial needs of the contracting authorities procuring the to be developed solution and whether it is a realistic analysis.
	Scoring Guide (only for Phase 2 and Phase 3)
1	The bid gives no indication that the solution is based on a realistic analysis of the economic and financial needs of the contracting authority/-ies
2	The bid gives little or no confidence that the solution is based on a realistic analysis of the economic and financial needs of the contracting authority/-ies
4	The bid gives some indication that the solution may address the economic and financial needs of the contracting authority/-ies, however, there is little confidence in the analysis
6	The bid gives some indication that the solution is based on a realistic analysis of the economic and financial needs of the contracting authority/-ies
8	The bid gives indication and confidence that the solution is based on a realistic analysis of the economic and financial needs of the contracting authority/-ies
10	The bid shows clearly and without doubt that the solution is based on a realistic analysis of the economic and financial needs of the contracting authority/-ies
	V.1 will not be a criterion in Phase 1, but only in Phase 2 and Phase 3.

V.2	The extent to which the approach demonstrates commercial feasibility, and whether it is a realistic commercialisation plan / route to market
	Scoring Guide
1	The tender gives no indication that the solution will be commercially feasible
2	The tender gives little or no confidence that the solution will be commercially feasible
4	The tender gives some indication that the solution may be commercially feasible, however, there is little confidence in the approach
6	The tender gives some indication that the solution will be commercially feasible
8	The tender gives indication and confidence that the solution will be commercially feasible
10	As described, the proposed outcome shows strong promise of commercial feasibility

2. Quality of the Tender

VI.	Validity of the technical approach that will be adopted
	Scoring Guide
1	There is no information given on the technical approach
2	The technical approach is poorly described
4	The technical approach described is unlikely to be valid for this challenge
6	The technical approach is valid but may not be sufficient to meet the challenge
8	The technical approach described is valid and is likely to meet the challenge
10	The technical approach described is highly valid and shows a strong likelihood to meet the challenge

VII.	The extent to which the tender shows a clear plan for the development of a working solution, and whether it is a reasonable plan to finish Phase 3 in time
	Scoring Guide
1	The tender does not contain a plan or milestones for the development of a working solution
2	The tender goes some way to describe a plan for the development of a working solution.
4	The tender contains a brief plan for the development of a working solution.
6	The tender contains a relatively clear plan for the development of a working solution.
8	The tender contains a clear plan for the development of a working solution.
10	The tender contains a very clear plan for the development of a working solution.

VIII.	Effectiveness of the project management
	Scoring Guide
1	Project management is not described in the tender.
2	Project management is poorly defined and gives little confidence that the project will be managed appropriately.
4	Project management is defined but gives little confidence that the project will be managed appropriately.
6	Project management is well defined, this may result in a well-managed project.
8	The tender shows a good management plan that should enable resources to be used appropriately, and shows some exploitation of research outputs
10	The tender shows a strong management plan that will enable resources to be used appropriately, and will ensure maximum exploitation of high quality outputs

IX.	The extent to which the tenderer and/or subcontractor shows or demonstrates to have dedicated the resources (e.g. human capital, equipment, man hours etc.) necessary to perform the scope of the tender
	Scoring Guide
1	There is no information that describes that the tenderer or any sub-contractor(s) have dedicated adequate resources.
2	There is minimal information that describes that adequate resources have been dedicated of the tenderer or any sub-contractor(s), therefore it is very difficult to make an assessment.
4	There is some information that adequate resources have been dedicated from the tenderer or any sub-contractor(s), but they are unlikely to be sufficient for the project.
6	There is information, and adequate resources have been dedicated from the tenderer or any sub-contractor(s).
8	There is information, and it clearly supports that adequate resources have been dedicated from the tenderer or any sub-contractor(s).
10	There is information, and it allows for an unreserved conclusion that adequate resources have been dedicated from the tenderer or any sub-contractor(s).

X.	The extent to which crucial risks (technical, commercial and other) to project success are identified, and how effectively these will be managed
	Scoring Guide
1	The tender does not mention risks or how the tenderer intends to manage these
2	Management of risk is ill-defined and inappropriate
4	Management of risk is defined but is inadequate for this project
6	Risk is clearly considered and proposed management of it is appropriate
8	Risk is well defined and will be well managed
10	Risks are well understood and articulated in the tender and will be managed appropriately

3. Price

XI.	Price Phase 1
	Scoring Guide
	For tenders with prices between 20,000 – 40,000 Euros the scoring will be calculated with the following formula: $\text{points} = 5 \times [10 - (9/20,000) \times (\text{tender price} - 20,000)]$
	Tenders with prices lower than 20,000 Euros receive 50 points

The scoring guide / formula for the price criterion for Phase 2 bids will be available in Phase 1 and in Phase 2 for Phase 3 bids.



2. Challenge Brief - PCP call for tenders

1. Introduction

This brief contains information about the SILVER pre-commercial procurement (PCP) challenge, carried out by the Technology Strategy Board.

1.1 Goal of the SILVER Challenge

The main goal of the SILVER challenge is to develop new innovative robotic solutions that target assisting the elderly and those caring for them with personal activities of daily living. These solutions are not yet on the market, but can be developed and tested within the SILVER PCP period of 2-3 years. These robotics solutions will be able to take over all or part of the work of care givers.

Tenderers should aim at a market introduction of their new solution a maximum of 2-4 years after the end of the PCP. In 2020 the new solutions should make it possible to care for 10% more people with the same amount of staff. But this challenge is not only about costs and time saving, it is also about improving the quality of life of elderly citizens and help them contribute to society as they grow older.

In total 2,150,000 Euros is reserved for the PCP SILVER contracts.

1.2 PCP

PCP is a competition-like procurement method which enables public sector bodies to engage with innovative businesses and other interested organisations in development projects, to arrive at innovative solutions that address specific public sector challenges and needs. The new innovative solutions are created through a phased procurement of development contracts to reduce risk.

Research and development services will be paid for at market prices, thus providing business with a transparent, competitive and a reliable source of early-stage financing, and the opportunity to establish an early customer, for a new solution. Since PCP focus on specific identified needs, the chance of exploitation of developed solutions increases.

The PCP method is suited to tenderers of all sizes, including small and medium-sized ones, as the contracts are of relatively small value and operate on short timescales.

1.3 Authority

The Technology Strategy Board, established in North Star House, North Star Avenue B1, SN2 1JF Swindon – UNITED KINGDOM will act as the Authority that carries out the PCP procurement on behalf and in the name of a cross-border group of SILVER contracting authorities with parties from five European countries. More information about the Authority and the group of SILVER contracting authorities can be found in the SILVER_01 Invitation to Tender document.



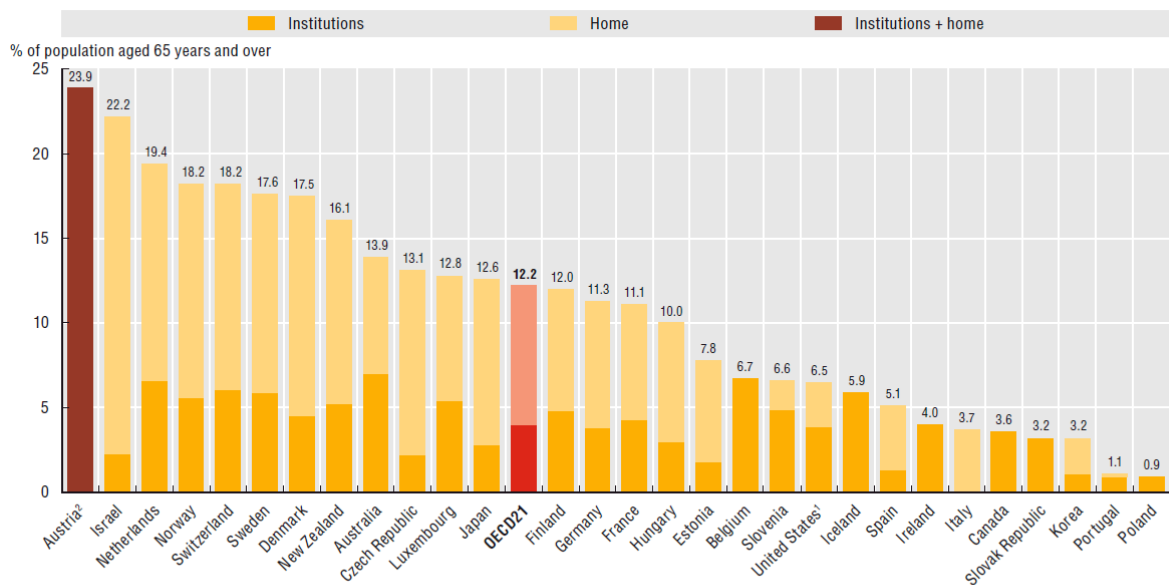
1.4 Background and preparation of the SILVER PCP

Demographics and policy

Demographic ageing is one of the most serious challenges Europe is facing. According to recent projections, the number of Europeans aged 65 and over will almost double over the next 50 years, from 87 million in 2010 to 148 million in 2060. Also life expectancy for both males and females is still increasing. Nowadays female life expectancy after the age of 65 is 20.7 years and male life expectancy after the age of 65 is 17.2 years.

If this demographic transition is not tackled head-on, it will raise considerable concerns for the financial sustainability of health and care systems. Public spending on health already accounts for 7.8% of GDP in the EU, and by 2060, public expenditure on acute health care and long-term care is expected to increase by 3% of GDP due to ageing. The increasing pressure on public budgets, the steady decline in the number of health personnel and the growing demands from older people for care products and services ask for solutions.⁵

8.4.1 Population aged 65 years and over receiving long-term care, 2009 (or nearest year)



1. In the United States, data for home care recipients refer to 2007 and data for recipients in institutions refer to 2004.
2. In Austria, it is not possible to distinguish LTC recipients at home or in institutions. The data refer to people receiving an allowance for LTC, regardless of whether the care is provided at home or in institutions. Because of this, Austria is not included in the OECD average.

Source: OECD Health Data 2011.

⁵ Data from July 2011, most recent data: Further Eurostat information, Database http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Sustainable_development_-_Demographic_changes.



As the population ages there are clear increases in various conditions that are detrimental to quality of life. According to the 2011 WHO World Report on Disability, 30% of the population above 60 have some kind of disability and the degree is rising with higher age⁶

Most European countries are developing policies to have the elderly stay as long as possible in their own homes in combination with home care rather than having them live in nursing homes. This reduces the pressure on health systems and contributes less to the rise of the national care budgets, than people living in nursing homes or in other institutional care centres. Living in their own homes independently contributes to the quality of life of the elderly.

Information on the national, regional or local situation in the Authority and the group of SILVER contracting authorities is given in annex 1.

Needs assessment

In all SILVER countries needs assessments have been carried out. The conclusion from these assessments was that eldercare is a highly complex area in which there are multiple potential target groups for each potential technology. The common needs of the different countries are best categorized and encompassed by the selected personal Activities of Daily Living (p-ADLs) in the SILVER call. These p-ADLs represent a real need of the public procurers and target areas in which all SILVER partners see a significant potential for technology in general and especially for robotics technology. The chosen ADLs both involve specific tasks and a substantial (albeit very diverse) group of elderly and their carers. The chosen ADLs are also, across all the participating countries, the most expensive areas in terms of costs for the public procurers.

Market consultation

The SILVER consortium has carried out a market consultation in September and October 2012 with information requests as preparation for the SILVER PCP. 33 responses were received from 12 different countries. 1/3 of the respondents were from technological institutes and universities and 2/3 from companies. 85% of the respondents have expressed an interest in submitting a tender for the SILVER call.

The responses helped form a better description of the innovation SILVER is looking for and further define the definition of robotics used in the SILVER call documents.

2. SILVER Challenge: Care for 10% more elderly

The SILVER challenge is to care for 10% more elderly with the same amount of staff in 2020 by having new robotics solutions that can take over all or part of the work of care givers. These robotics solutions should enable elderly – even when facing multiple physical and mental disabilities – to stay independently as long as possible and live in their own homes, if necessary in combination with assistance from home care staff.

In order to let older people live independently in their own homes, it is important to understand what kind of activities elderly people need assistance with. Current methods of

⁶ http://whqlibdoc.who.int/publications/2011/9789240685215_eng.pdf



supporting these individuals rely heavily on human intervention either from care professionals or from unpaid carers such as relatives. However, our society is moving towards one where families are more dispersed and increasingly elderly people are living alone.

To stay independent it is important that the elderly receive tailored support that does not take over activities they are still able to do themselves, especially in situations where many would prefer to be independent from help from other humans. The more physical and mental activity is encouraged, the better this is for the health condition of the elderly.

If the assistive tasks or parts of these tasks could be done by a robotic solution this would not only save time for the care givers and facilitate the work of care givers, but – and this may be more important – would add to the quality of life of the care receivers as well. Being able to do personal activities of daily living at a time that suits the person and not having to wait for someone to assist, would make the elderly more self-reliant.

Experts will evaluate the tenders amongst others on the expected impact the proposal will have on time saving for home care staff and usability for the target group. The robotics solution should target assisting the elderly, though the robotics solution might be operated by the care giver instead of the care receiver. So the target group for the solution can be both care givers and care receivers.

Tenderers are advised to talk to local homecare service and to care givers for a better understanding of the homecare market, the needs of the elderly and the work that is done by care givers. Understanding of what kind of assistance and how this is given will help the tenderer to make a usable robotics solution that fits the needs of the elderly and will contribute to the SILVER challenge.

Boundary conditions

The robotics solutions looked for use advanced state of the art technology and:

- enable more elderly people with disabilities to live independently in their homes without an increase – or preferably even a decrease – in resources needed from care giver organisations, nor without putting extra burdens on relatives and friends;
- will promote aging-in-place by making the elderly independent and thereby enabling them to stay in their own homes for as long as possible with a good quality of life
- are designed to assist individuals primarily in their own homes even though some of the solutions might be useful also in care facilities;
- are usable for the elderly, taking into account challenges that are common with rising age, e.g. mild disabilities both physical such as eye-sight, hearing, strength, balance, coordination and mobility and cognitive such as memory and learning capacity;
- do not stop activity the elderly are still able to do themselves;



Preferably these solutions should also:

- increase the quality of life of the elderly, and facilitate the work of care giver professionals, as well as families and friends,
- make a positive contribution to the general health condition of the elderly (alternatively, decline into ill health is delayed),
- aim at giving tailored support rather than taking over activities that the elderly are still able to do themselves
- encourage physical and mental activity by supporting activities that carry out activities with elderly rather than taking over activities fully, especially in situations where many elderly would prefer to be independent from help from other humans.

Elderly

It is common that the elderly have multiple diagnoses that interlink. For example, many elderly suffer from a combination of conditions that increasingly common with rising age, i.e. mild disabilities both physical such as eye-sight, hearing, strength, balance, coordination and mobility and cognitive such as memory and learning capacity. Such conditions can have a very severe impact on the ability of an individual to continue their lives in an independent manner, as they impair both physical and cognitive skills.

Such conditions can have a very severe impact on the ability of an individual to continue their lives in an independent manner, as they impair both physical and cognitive skills.

To illustrate what difficulties elderly people encounter in their daily living we have described the following case:

CASE description: Anne is 79 years old and lives in an apartment in the suburbs of a large city. Since the death of her husband two years ago, she is alone. That is not always easy, because Anne notices that she is getting older.

Preparing meals, cleaning her home, everything becomes more difficult. She still does her shopping, with a rollator. Her health is declining. Anne has severe diseases and she has to take medicines at the right time. She needs support stockings. She will not give up independence and manages as well as she can. Recently she has bought a robotic vacuum cleaner to help her with the cleaning. Due to lack of strength in her arms and hands, she cannot put her stockings on and off herself. Homecare staff comes to help her every day with this.

When her daughter moves to another city, she needs more help from homecare. She receives a hot meal every day that she only has to heat in the microwave to cook. A few months later she also needs assistance with showering and dressing. More recently, medication has become a problem, since lately she has started to forget things. In the morning, the nurse helps and reminds her about her morning wash, getting dressed and making breakfast. The nurse also helps remind her to take her medicine on time. In the evening, the nurse sees to it that Anne has had dinner and ensures her evening medication has been taken. She also helps Anne to get dressed for the night.



Business opportunities

The demographic changes and the pressure on the small group of care givers create opportunities for the development of new technological solutions for enabling and sustaining management of activities of daily living, such as getting dressed or maintaining personal hygiene; or instrumental activities of daily living like taking medication, doing grocery shopping, preparing a hot meal; or making up for physical limitations apparent in lifting objects.

3. Scope

The Authority is looking for new innovative robotics solutions that target assisting the elderly in order to assist them with personal activities of daily living (p-ADL). These solutions are not yet on the market, but can be developed and tested within the SILVER PCP period of 2-3 years. These robotics solutions will be able to take over all or part of the work of care givers.

This PCP challenge is about combining different technologies into a single system to deliver a robotic support for p-ADL tasks as mentioned before, to assist independent living of the elderly. The Authority is using the following definition for robotics:

Robotics for care is considered the domain of systems able to perform coordinated mechatronic actions (force or movement exertions) on the basis of processing of information acquired through sensor technology or through information and commands of operators, with the aim to support the functioning of impaired individuals, care and rehabilitation of elderly and patients and also to support individuals in prevention programmes.

Excluded are tenders focussing solely on development of basic robotics components; communications tools and solutions simply interacting through a display or alerting the outer world on certain conditions.

Functional requirements

Tenderers should target robotics solutions assisting the elderly with one or more of the following activities related to self-care tasks. These activities are known in homecare as personal activities of daily living (ADL). The personal ADL below are not written in a prioritised order. To get an impression on how much time these activities cost for homecare staff we have added some time estimations in the following table.