



## **Annex 1 – Action plan template**

Produced by each region, the **action plan** is a document providing details on **how** the lessons learnt from the cooperation will be exploited in order to improve the policy instrument tackled within that region. It specifies the nature of the actions to be implemented, their timeframe, the players involved, the costs (if any) and funding sources (if any). If the same policy instrument is addressed by several partners, only one action plan is required.

### **Part I – General information**

Project: HOCARE - Delivery of Innovative solutions for Home Care by strengthening quadruple helix cooperation in regional innovation chains

Partner organisation: ÁEEK National Healthcare Service Center

Other partner organisations involved (if relevant): not relevant

Country: Hungary

NUTS2 region: Central-Hungary

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### **Part II – Policy context**

The Action Plan aims to impact:	<input checked="" type="checkbox"/>	Investment for Growth and Jobs programme
	<input type="checkbox"/>	European Territorial Cooperation programme
	<input type="checkbox"/>	Other regional development policy instrument

## Part III – Details of the actions envisaged

### ACTION 1 – UNMET NEEDS

#### ACTION 1 – UNMET NEEDS

1. **The background** (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)

National Healthcare Service Center (ÁEEK) partnered with 7 other European organizations in the Interreg Europe HoCare project to boost delivery of homecare innovative solutions. HoCare aims at optimising Structural Funds investment to strengthen regional innovation system in the field of health home care. The engagement of the local stakeholders through the regional multi-stakeholders group (RMG) series of meeting organized in Cyprus offered the opportunity for identifying and draw the local situation (key challenges), as well as it produced the following suggestions (recommendations) with the objective to improve the selected Policy Instrument considering the transfer of key elements and learnings of good practises identified by HoCare partnership.

Below there is a summary of the lessons learnt in the area of UNMET NEEDS during the project implementation which were split into 3 main parts alongside the following issues: (1.1) Key challenges, (1.2) Recommendations and (1.3) Good practices. This constitutes the basis for the implementation of our Action Plan:

#### 1.1.KEY CHALLENGES:

The following key challenges were identified by AEEK and their stakeholders in the area of INNOVATION ECOSYSTEM - FORMAL AND INFORMAL HEALTHCARE PROVIDERS INSIDE OF THE INNOVATION ECOSYSTEM AND THE TRANSFER OF KNOWLEDGE OF UNMET NEEDS in Hungary during the project implementation:

1. **LACK OF COOPERATION AMONG ALL HELIXES OF THE ECOSYSTEM** (involvement of end users quite rare): In Hungary in general neither formal nor informal healthcare providers have been involved in innovation partnerships and cooperation as a usual, frequent and common solution to develop existing and to create new home care services and technical background so far. Therefore we can state that there is a general lack of cooperation in the ecosystem and in particular in this area.
2. **LACK OF RESEARCH INFRASTRUCTURES SPECIALIZED IN HOME CARE:** there is not a specific research institution or a network of institutions which are specialized in this area. Home care is not in the focus of any specific such institution therefore we can state that it has a minor role in the research infrastructure in spite of official government policy.
3. **LACK OF HOME CARE RESEARCH PRACTICES:** due to the abovementioned reason there are no research practices in this field in Hungary. Neither on institutional nor on research practice level it is not a priority at all therefore there is a clear lack of a coherent research approach and solutions proposed for implementation.
4. **LACK OF COMMUNICATION AMONG END USERS AND OTHER HELIXES:** as the cooperation is on a low level and rather working on an ad-hoc basis and as there is no strong institutions network on the research side therefore there is a low level of communication among end users and other helixes. Although this is a general issue in the Hungarian health industry it is a particular problem in this area, too.

5. LACK OF CAPACITY AND NATIONAL AND REGIONAL RESOURCES TO INITIATE R&I PROJECTS (most resources come from ESIF, not from domestic sources): Structural Fund resources are available to initiate projects however HU state resources are not present (regions do not exist in Hungary, meanwhile county-level administration is not involved in health care-related topics). Government relies too much in ESIF resources and it substitutes national resources with ESIF which is not always a viable solution.

6. LACK OF SPECIAL STAFF IN HOME CARE: due to the low level of salaries and the lack of a long-term financing contracts/governmental commitment there is a lack of staff in health care in general and also in particular in the home care system. Also there is a lack of clear intention to set up and offer proper skill development schemes and curricula.

7. LACK OF OPERATIONAL SOCIAL FUNDING RESOURCES AND/OR PURCHASING POWER FOR LONG TERM HOME CARE SERVICES: lack of long-term financial commitment hinders innovation and research in the sector and also hinders long-term development programmes and institutional efforts to operate effective home care solutions.

The following key challenges were identified in the area of the SUPPORT FROM OPERATIONAL PROGRAMME - SUPPORT OF FORMAL AND INFORMAL HEALTHCARE PROVIDERS INSIDE THE RESEARCH AND INNOVATION PROJECTS IN THE OPERATIONAL PROGRAMME:

1. LACK OF RESOURCES - more funds are needed both for project (development and investment) financing and for covering operational (running) costs. While there is a strong trend towards integrated care and deinstitutionalization (move chronic patients out of mental and other health care institutions to home care) determined by the aging society and unsustainable system of long term inpatient chronic care, and despite this trend is based on shifting the burden of paying long term hotel and care services from the social, public or private insurance systems to the individuals receiving the service, unfortunately only a lower percentage of people and families compose real purchasing power for home care solutions, services and products irrespectively whether there is innovation or an unmet need was met or not. Therefore the intention of the government is clear and understandable however as expenses of the home care shall be covered by the families it is unclear how the government intention and related solutions will work in the future.

2. SPECIFICITY OF THE AREA IN QUESTIONS – HOME CARE - Is not an Axis of OP due to the OP-system:

- the OP responsible for supporting innovation and research [EDIOP] does not concentrate on the RIS3 focus areas (e.g. health industry) by special calls for proposals, only evaluation criteria filter the submitted applications which is inadequate to finance specific projects although there is a governmental intention as described above,

- the OP responsible for supporting social development [HRDOP] does not concentrate on home care, however it has a horizontal focus on the so called “deinstitutionalization” (transfer of care from institutions to the home of the patient). The actions supported by this OP may support the uptake of technical innovation or the creation of eHealth innovation, however, there is no requirement for co-creation and cooperation.

Therefore although it is part of the “deinstitutionalization” process still development funding (in form of ESIF) is not specifically available for such projects. Therefore the implementation of projects in the area cannot find adequate financing resource: OP funding is not really available meanwhile national funding is non-existing.

3. LACK OF CLEAR FUNDING AND ADEQUATE FUNDING SCHEME TO SUPPORT QUADRUPLE-HELIX COOPERATION

Both relevant sectorial OPs (HRDOP widening home care market and developing human capacities of HEIs and research, such as EDIOP fostering entrepreneurial innovation and research in general) emphasise the significance of quadruple helix cooperation (QHC). However, neither HRDOP, nor EDIOP have opened specific calls for projects or grants for predefined projects for QHC yet. Furthermore there are only few and not too serious conditions among the evaluation criteria in the project selection processes. Hungarian OPs focus on

fostering and supporting cooperation between business and research/HEIs or among international/global corporations, mid-cap companies and SMEs. Involvement of end users or public has minor importance, while co-operation among all the 4 helixes is only marginal which hinders the development and operation of adequate solutions and projects.

#### 4. LACK OF STRATEGICAL INITIATIVES

Unfortunately actions strengthening the appropriate environment for generating new solutions efficiently through addressing unmet needs of healthcare providers have not been prepared and launched yet. Considering that innovation should result not only in adequate (home) care products, protocols and services, but affordable and accessible ones as well, the required actions should help all the stakeholders to benefit and earn from taking part in the innovation process.

#### 1.2 RECOMMENDATIONS:

As response to the key challenges the following recommendations were formulated during project implementation to provide future solutions:

- 1) **Strengthening cooperation and communication among different actors in home care with focused calls** for the key areas defined in sector development priorities in RIS3. As the majority of the OP resources are already allocated to open and forthcoming calls, even minor modifications in selection criteria could lead to results – such modifications can be initiated but shall be always agreed by the subsequent MAs,
- 2) **Promotion of research and innovation infrastructures and activities** is available in general, therefore **networking and project generation events specialized in home care**, health and other priority sectors in RIS3 could likely bring improvement. Financial resources to organize these events shall be ensured either from ESIF or national resources to provide a forum for the networking and exchange of ideas and results for the participant institutions,
- 3) **The importance of quadruple helix cooperation can be acknowledged by giving high score/value to this one among selection criteria** of the current – and planned – calls funded by OPs and parallel funding resources. Lead applicants from business, research and HEI side should be aware of the opportunities and strength of cooperating with public bodies and end-users, especially patient, care giver and payer side; Furthermore, innovative solutions for involving and paying/reimbursing families (as care receivers and informal care providers) should get priority in order to help finding adequate answers to the challenges of partial lack in purchasing power for homecare products and services, otherwise governmental intentions and policies may not be implemented as planned or it may happen that even fail to meet the policy intentions,
- 4) It is important to **let applicants define the legal form of their quadruple helix cooperation and partnership free**. Centrally predefined legal forms, viz., may increase useless administrative or bureaucratic burdens in effective and efficient implementation of the projects. Applicants shall be able to come up with viable – although also legally responsible – form of operation and they shall have the freedom to find the most suitable forms of cooperation also concentrating on the viability issue,
- 5) In addition **improvement of monitoring procedures** - by collecting information how needs identified and experiences shared by formal and informal caregivers and other end-user parties were taken in consideration and utilized during project implementation and maintenance – could be a considerable step ahead in those cases when quadruple helix cooperation was not required originally in the calls,
- 6) **Calls** which have more budget allocated than eligible applications can absorb, but should have a considerable contribution to the performance indicators of the OP, **can be modified by changing both their focus area and selection criteria. Eligibility of open innovation services and cooperation with all stakeholders in the quadruple helix can contribute to the success of EDIOP-calls promoting industrial parks** for instance: as this call puts an emphasis on service development instead of basic infrastructure in the industrial parks. **Smart specialization** (e.g. in homecare, health industry or other RIS3 priorities) **can be**

**fostered more strongly than current through modified / enhanced selection criteria.** In this way important, but underperforming intervention areas may get chanced to close-up;

7) **Synergies with other OPs and funding mechanisms** could be exploited if focus areas and selection criteria in EDIOP calls would consider and focus on the aims and results of projects funded by other tools. Concentrating on some special markets in RIS3 priority sectors such as health - including homecare – may offer gains in effectiveness on implementing the OP after performance reserve of the PAs might be used to open new calls in the well performing intervention areas too. Markets emerging and expanding thanks to the development of human capacities, methods, protocols and infrastructure in e.g. **e-health, m-health, tele-health, one-day surgery or integrated and home care need more and more innovative solutions to provide equal access and better quality to a wide range of population affected by the aging trend and the progress in deinstitutionalization.** Promoting innovation activities which deliver uptake of research results by identifying specific needs (e.g. in homecare) that could be already satisfied (thanks to new research outcomes) and make production or products/services more effective, can be combined with actions building bridges between OPs.

### 1.3 SELECTED GOOD PRACTICES:

As part of the project implementation good practices (GPs) were collected by the partnership and discussed and approved by the partners. We in AEEK selected four relevant ones from the list of the collected GPs. Selected GPs offer replicable elements and methods for involvement of end-users and informal and formal carers to design, develop and implement new technologies for home care.

New projects may be initiated based on these elements and methods, however, they can be and must be applied and redesigned to fit the specific Hungarian legal, social, infrastructural, institutional and market conditions, existing quality and level of technological services etc.

The following Good Practices were selected:

#### **1.01 InTraMed-C2C (CZ)**

Good practice of gathering and transferring innovation ideas from formal healthcare providers and their various employees to SMEs via innovation workshops, pilot projects and medical innovation database.

#### **1.10 Digital inclusion and active ageing (SI)**

Good practice of iterative methodology for involvement of end-users and informal and formal carers to design, development and implementation of new consumer technologies for elderly people.

#### **1.08 Tele-Rehabilitation (CY)**

Good practice of user/citizen helix actors being engaged to public initiated and lead project in telemedicine (as one of the main R&I field in home care) through user-centred design to help define real patient needs.

#### **1.11 RehabNet (PT)**

Good practice of user/citizen helix actors being engaged to research initiated and lead technological project using robotics (as one of the possible future main R&I field in home care) through user-centred design to help create specific content of the service and its automatization process.

Our action plan is developed as an adequate response to the key challenges following the recommendations and building upon the selected Good Practices.

## 2. **Action** (please list and describe the actions to be implemented)

We have grouped the four good practices quoted above in two scenarios, which basically make the ground for the actions in the field of UNMET NEEDS. We have defined altogether 4 versions under the two scenarios (1 primary and 1 backup in each scenario). Actions are defined so that if the more ambitious, primary version (e. g. launching a new call) proves impossible to be implemented than efforts will be shifted to the backup (less ambitious still fully relevant) version defined below.

## **2.1 Scenario 1 – Transferring combined elements of “InTraMed-C2C (CZ) and “Digital inclusion and active ageing (SI)”**

Scenario 1 proposes **gathering and transferring innovation ideas from all helixes to satisfy unmet needs via quadruple helix infrastructure for applied RDI**. It is one of the fields that is recommended to be further developed in Hungary. Successful scouting, creating, valorising and uptake of ideas and solutions need open innovation, workshops, pilot projects and medical innovation database. Effective use of ESIF needs focused actions that foster and assist progress in deinstitutionalization contributing to make health and social systems and insurance cover more sustainable and patient friendly.

### **2.1.1 PRIMARY VERSION IN SCENARIO 1:**

Based on this the proposed action is **launching a new call in EDIOP PA2 R&D&I with the working title “Support to health industry innovation building on real market needs including activities for the admission to health insurance funding”** (Type 1 improvement). The call would focus on the development of such health care related technologies that strengthen the competitiveness of the health industry and improve the operation of the health care system. Compulsory activities would include thorough stakeholder analysis and quadruple helix cooperation, which are crucial for the inclusion of the developed technology in health insurance funding. If feasible only such project applications could be submitted that are related to projects that have been completed in the Human Resources Development Operational Programme. Basic features of the call are (focusing only on those parameters that make it different from a general innovation support call to SMEs):

#### **Eligible applicants:**

- As sole applicant or consortium leader: SME; health care service provider run by the state/church
- As consortium partner: SME; other company; HEI/research institute; association of individuals or organisations as demanders of health services; health service financing organisation; private health care service provider; health care service provider run by the state/church

#### **Eligible activities:**

- thorough surveying and evaluation of demands, interest of key stakeholders (compulsory)
- setting up and running quadruple helix cooperation based on the stakeholder analysis.  
Composition of the quadruple helix cooperation: 1) SMEs/companies developing the new health care technology; 2) health care sector (providers, funding organisations); 3) HEIs and research institutes; 4) health service demand side representatives
- development activities related to projects that have been completed in the Human Resources Development Operational Programme

The funding source for new call is from the unused financial frame of EDIOP PA2 R&D&I. More details in Section 6.

### **2.1.2 BACKUP VERSION IN SCENARIO 1:**

If the launch of the new call does not prove feasible then the alternate action is the modification of the selection criteria of one of the EDIOP PA2 innovation calls targeting SMEs (EDIOP-2.1.1, EDIOP-2.1.2, EDIOP-2.1.7, EDIOP-2.1.8) (Type 1 Improvement). The following new selection criteria are proposed to be included:

- project focuses on development activities related to projects that have been completed in the Human Resources Development Operational Programme (10% of total scores)
- project activities include thorough surveying and evaluation of demands, interest of key stakeholders (10% of total scores)
- project activities include setting up and running quadruple helix cooperation based on the stakeholder analysis with the composition defined above (10% of total scores)

## 2.2 Scenario 2 – Transferring combined elements of “Tele-Rehabilitation (CY)” and “RehabNet (PT)”

Scenario 2 proposes learnings, validated solutions and ready-to-replicate results of good practices for **engaging user/citizen helix actors to public initiated and lead projects in telemedicine** (as one of the main R&I field in home care). These may help to seize the opportunities provided by the implementation of system-innovating health projects in the Human Resources Development Operational Programme 2014-2020 (HRDOP). Research initiated and lead technological projects can be assisted by experiences in user-centred design to help define real patient and care provider’s needs. Robotics and automatization (as possible main RDI fields in healthcare, incl. home care) are essential to help create specific content of the service.

### 2.2.1 PRIMARY VERSION IN SCENARIO 2:

Based on this the proposed action is **launching a new call in EDIOP PA2 R&D&I with the working title “Support to innovation projects with direct relation to the Electronic Health Sector Developments”** (Type 1 improvement). The “Electronic Health Care Service Space” (EHCSS) is a major public initiated project introduced recently. EHCSS is an IT infrastructure with service oriented setup securing cooperation and data-exchange between various subsystems in health care. Beyond that it provides excellent opportunities for further cost-efficient developments that can be executed by third parties (interested SMEs for example) exploiting quadruple helix cooperation. ÁEEK is designated by law to operate EHCSS. Related to this a specific call in HRDOP (HRDOP-1.9.6-16 entitled “Electronic health sector developments” aims at improving efficiency of the health sector and services provided to population. Main tools of the call: central service development and further development of EHCSS; setting up central framework for tele-medicine and tele-consultation, setting up imaging data-centre for tele-consultation, implementing tele-medicine pilot; utilisation of sectorial data; e-health competence development, business utilisation of functions; further development of the sectorial IT infrastructure. Developments in the HRDOP call provide opportunities for SMEs to develop health-related technologies that can be directly linked with EHCSS using existing or new infocommunication solutions. Based on this the new call is proposed to target companies that – actively using quadruple helix cooperation -develop new or improve existing health equipment, tools or solutions that be integrated in EHCSS.

#### Eligible applicants:

- As sole applicant or consortium leader: SME; health care service provider run by the state/church
- As consortium partner: SME; other company; HEI/research institute; association of individuals or organisations as demanders of health services; health service financing organisation; private health care service provider; health care service provider run by the state/church

#### Eligible activities:

- thorough surveying and evaluation of demands, interest of key stakeholders (compulsory)
- setting up and running quadruple helix cooperation based on the stakeholder analysis. Composition of the quadruple helix cooperation: 1) SMEs/companies developing the new health care technology; 2) health care sector (providers, funding organisations); 3) HEIs and research institutes; 4) health service demand side representatives
- development activities related to projects that have been completed in the Human Resources Development Operational Programme targeting health care technologies and services. Activities may include testing and designing manufacturing and sales processes.

The funding source for new call is from the unused financial frame of EDIOP PA2 R&D&I. More details in Section 6.

3. **Players involved** (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)

#### Scenario 1 (both proposed versions) and Scenario 2 (both proposed versions)

The following players will be involved in implementing the actions:

**ÁEEK, National Healthcare Service Center** is the initiator of the actions as an outcome of the HOCARE project. ÁEEK is a public institution established by the Government of Hungary and controlled by the Minister of State for Healthcare, Ministry of Human Resources. ÁEEK takes pro-active role pulling together other concerned players (stakeholders), managing the implementation of the action plan, organising meetings, events, delivering drafts of concept papers and collecting opinions and remarks of involved players.

**Ministry of Human Resources – Minister of State for Healthcare (MHR):** ÁEEK as a public organisation belongs to this Ministry. Therefore initiating actions related to EDIOP officially will be channelled through MHC. However, it does not mean that informal talks, workshops, events could not be organised by ÁEEK directly. MCH will be invited to take part in expert groups, workshops to provide remarks on the planned action.

**Ministry for National Economy – Minister of State for Economic Development:** development of health industry belongs to this State Secretariat as such they are responsible for defining and altering the thematic content of EDIOP calls. As such they are crucial player in realising the Action Plan. Therefore they will invited to all relevant event and workshops and their remarks will be taken into account.

**Ministry for National Economy – Minister of State for the Utilisation of EU Funds:** This State Secretariat includes the Managing Authority of EDIOP, which is implementing body of the new or altered calls under EDIOP PA2. As such they are crucial player in realising the Action Plan. Therefore they will invited to all relevant event and workshops and their remarks will be taken into account.

**National Research, Development and Innovation Office (NRDIO, responsible body for S3):** NRDIO is responsible for the R&D&I policy in Hungary concerning design and implementation (with the exception of EU co-financed calls). Since the new/altered calls belong the R&D&I priority axis of EDIOP therefore their involvement may provide useful insights concerning the thematic content of the planned action.

**National Health Insurance Fund Administration (NHIFA):** The core activity of the National Health Insurance Fund Administration includes functions relating to the management of the Health Insurance Fund, including funding and reimbursement accounting, the maintenance of records, keeping financial accounts and fulfilling reporting obligations. It carries out procedures relating to the social security assistance of pharmaceuticals and medical aids and the adoption of health technologies. Since the proposed actions target the development of health industry technologies, tools that would be admitted preferably for financing from the National Health

Insurance Fund Administration therefore their involvement is very important in the upcoming tasks related the implementation of the Action Plan.

**National Institute of Pharmacy and Nutrition (OGYÉI):** OGYÉI prepares supportive materials for decision makers on all level in health care, prepares national and international publications, posters and presentations, conducts health economic research, initiates legislative changes in the field of health technology.

#### 4. Timeframe

##### **Scenario 1 (both versions) and Scenario 2 (introducing new call under EDIOP PA2)**

We calculate with a 2-year-long timeframe for the implementation of the planned actions including the following activities:

Project management (24 months starting from April 2018)

Preparatory activities (9 months starting from April 2018): further investigation of the underlying good practices. the MA gathers the detailed information it needs from the underlying good practices using the existing partner contacts of AEEK from HOCARE with the inclusion of a study trip. Furthermore it includes stakeholder involvement on the planned action.

Implementation phase (12 months starting from January 2019): Designing the new/modified call with intense involvement of players through workshops, expert meetings and launch of the new/modified call. Furthermore it includes preparatory activities for the evaluation of the action (last 3 months).

Evaluation of action (3 months starting from January 2020) carried out by the MA building on first experience from operation.

Dissemination activities (24 months starting from April 2018)

#### 5. Costs (if relevant)

##### **Scenario 1 (both versions) and Scenario 2 (introducing new call under EDIOP PA2)**

Project management: this is done by the MA on a regular basis. No specific cost is expected to incur on this

Preparatory activities: cost of study strip 3 MA colleagues for 3 days abroad: EUR 5000

Implementation phase: organisational costs of workshops and expert meetings: EUR 5000

Evaluation of action: this is done by the MA on a regular basis. No specific cost is expected to incur on this

Dissemination of activities: EUR 15000

Total cost is estimated at EUR 25,000.

#### 6. Funding sources (if relevant):

##### **Funding source related to Scenario 1 (both versions) Scenario 2 (introducing new call under EDIOP PA2)**

Since no similar targeted calls have been launched with such a profile yet, therefore cautious financial allocation is advised. Using comparable examples from the past and first estimates on potential interest for such calls the proposed financial allocation from EDIOP PA2 is EUR 15-20 million.

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## ACTION 2 – PUBLIC DRIVEN INNOVATION

### ACTION 2 – PUBLIC DRIVEN INNOVATION

1. **The background** (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)

National Healthcare Service Center (ÁEEK) partnered with 7 other European organizations in the Interreg Europe HoCare project to boost delivery of homecare innovative solutions. HoCare aims at optimising Structural Funds investment to strengthen regional innovation system in the field of health home care. The engagement of the local stakeholders through the regional multi-stakeholders group (RMG) series of meeting organized in Cyprus offered the opportunity for identifying and draw the local situation (key challenges), as well as it produced the following suggestions (recommendations) with the objective to improve the selected Policy Instrument considering the transfer of key elements and learnings of good practises identified by HoCare partnership.

#### 1.1 KEY CHALLENGES

Concerning the innovation ecosystem, as a general challenge - appearing both in the innovation ecosystem and the granting mechanisms offered by the operational programmes concerned – **the lack of social funding resources and/or purchasing power for long term home care services in the daily operation** should be mentioned first. More funds are needed both for project (development and investment) financing and for covering operational (running) costs. While there is a strong trend towards integrated care and deinstitutionalization (move chronic patients out of mental and other health care institutions) determined by the aging society and unsustainable system of long term inpatient chronic care, and despite this trend is based on shifting the burden of paying long term hotel and care services from the social, public or private insurance systems to the individuals receiving the service, unfortunately only **a lower percentage of people and families compose real purchasing power for home care solutions**.

Hungary has accelerated the deinstitutionalization process and launching/continuing various integrated care programmes in the social and health care system since 2014. The basis of this process were laid down in the Human Resources Development OP (HRDOP 2014-20), and there are actions and projects in this OP to shift care from hospitals and social houses to assisted living, home, remote/tele and integrated services.

On one hand these actions and projects leave no or minimal space for private and business innovation. Therefore, **procurement of innovation has not come on agenda yet. The conditions defined by the OP do not prefer PPI/PCP**.

On the other hand, **however, the OP has opened the way to public driven innovation appearing in project ideas and initiatives that are initiated directly by public institutions** (e.g. government, region, town, public hospital, etc.). Some of these ideas are predefined by the Government and carried out by public institutions. Other initiatives are involving other organizations by calls for proposals and executed by the approved projects. The management of these centrally predefined or selected and approved projects is not interested and/or encouraged to procure innovation. However, in accordance with the preconditions and requirements of project selection, the grant agreement contains conditions to implement the innovative solutions prescribed in the feasibility study and/or establishment document of the project proposal. Unfortunately, innovation in these cases is limited to new/renewed care and treatment solutions based on existing technical equipment and do not foster further innovation to explore the emerging possibilities in the technological development. In addition, these cases do not or rarely build on cooperation with other stakeholders (patients and other end users, industry, HEIs and research organizations). Good practices, however, can be found among centrally initiated and implemented projects and programmes launched in the previous programming period (e.g. the META and MENTA projects financed by the Social Renewal OP /SROP 2007-13 or the VHC pilot project in the Prevention Focused Primary Care Modell Programme co-financed by the Swiss Contribution Fund).

**Public organizations were hardly interested in initiating R&I cooperation and/or procuring innovation services up to now.** However, they prepared several projects that contained innovative solutions, and these solutions were executed during project implementation. In a few cases public organizations initiated R&I cooperation to deliver new care models for instance.

**Public driven innovation in Hungary appears mainly in project ideas or initiatives that have been initiated directly by a public institution.** The “drive” based on public procurement of innovations (PPI) or pre-commercial procurement (PCP) is hardly detectable despite the harmonization of the national public procurement law to the EU regulations was carried out in the end of 2015. **The reasons of this situation can be summarized in 3 main issues: (1) Procurers (public side), bidders (business side) and Public Procurement Authority (authority side) lack knowledge and experience in these procedures** and would need transitional period, time, funding and pilots for training and preparation for general utilization; **(2) National, regional and local development and reorganizational programmes which generate considerable public procurement activities are mostly financed by EU co-funding through operational programmes. Thus major and bigger projects implementing them have been prepared for years. Any change in the procurement scheme may lead to delays, therefore, the project management and the managing authorities (and their intermediate bodies) are interested in avoiding them.** (A change for PPI and PCP would need extra days not only for preparing a new tender, but for carrying out additional activities in looking for unmet needs and solutions that can be translated to the specification of the final products and services subject to the procurement delivering the planned development and/or reorganization.) The management of middle or smaller projects – where the preparation of the procurement and implementation generally needs shorter time – might be the target stakeholder group to prepare and implement PPI/PCP activities, however, they are pressed at/by policy level to deliver predefined and detailed outcomes in a short term. In addition, project management is strongly interested in avoiding any risk leading to irregularity and losing funding. Therefore, any type of public procurement procedure that is unknown is neglected automatically. **(3) Most operational programmes generally leave less space for innovation carried out by the business sector. Especially social OPs contain predefined actions, solutions and outcomes and/or build on calls for projects where procurement is less important** (or in other cases predefined projects which are subject to the reasons introduced above). The above general situation is well demonstrated by the home care sector.

**As of current we have no information about finished, completed and successful PPI or PCP initiatives in Hungary.**

Key challenges identified by AEEK and their stakeholders can be summed up in the field of PUBLIC DRIVEN INNOVATION – INNOVATION ECOSYSTEM, as follows:

**INNOVATION ECOSYSTEM – PUBLIC ORGANIZATIONS AS PPI, PCP AND OTHER INNOVATIVE PROJECTS INITIATORS**

**KEY CHALLENGES:**

1. LACK OF KNOWLEDGE AND EXPERIENCE IN RELEVANT PROCEDURES AND NEED FOR TRANSITIONAL PERIOD, TIME, FUNDING AND PILOTS FOR TRAINING AND PREPARATION FOR GENERAL UTILIZATION;
2. **PREPARED AND SELECTED PROJECTS READY TO BE IMPLEMENTED BY EU CO-FUNDING SHOULD BE REDESIGNED, BUT THERE ARE TOO MANY RISKS AND NO TIME TO DO SO;**
3. **MINOR SPACE FOR INNOVATION CARRIED OUT BY THE BUSINESS SECTOR IN THE OPS, ESPECIALLY IN SOCIAL OPS**

Concerning the support from operational programmes, RIS3 and relevant policies for industrial and/or territorial development theoretically welcome PPI, PpP, or public led R&I projects. Despite these documents foster authorities to prepare and implement supporting actions, first calls for grants have not been designed and opened yet. **As of current no PPI/PCP projects, no experience yet** as written above.

It must be also underlined that business innovation in Hungary is fostered by the Economic Development and Innovation Operational Programme (EDIOP 2014-20). This OP encourages clustering and innovation partnership/cooperation among various enterprises and/or enterprises and other stakeholders on the research/HEI (and in some cases public) side. **Public driven innovation may appear in projects initiated and coordinated by public universities or research institutions. These projects, however, mostly deliver outcomes and results at TRL 1-5 (mainly basic research).** Hospitals and other professional care providers are practically excluded from the initiator and coordinator roles, and get functions in the different stages of clinical research/approval.

It must be also emphasized that the accelerated deinstitutionalization process and launching/continuing various integrated care programmes in the social and health care system (combined with the national e-health system connecting care/health data recorded at primary, inpatient and outpatient care and e-prescription system from November 2017) open and develop a new market for innovative medical, telehealth, remote care, mobile care and auxiliary products and services (and for the “big data industry”). Despite the market is still emerging and growing, there is a tangible need for new equipment and services. **Despite the purchasing power has to be increased in general and geographically levelled off, there is already a sound demand ready to pay or co-pay for the innovative services. In addition, public and private insurance system is interested to go on shifting care services from the more expensive inpatient care to other – more efficient – services.**

Key challenges identified by AEEK and their stakeholders can be summed up in the field of PUBLIC DRIVEN INNOVATION – SUPPORT FROM OPERATIONAL PROGRAMME, as follows:

#### **SUPPORT FROM OPERATIONAL PROGRAMME - SUPPORT OF PUBLIC DRIVEN INNOVATION PROGRAMMES / INITIATIVES FROM OPERATIONAL PROGRAMME**

##### **KEY CHALLENGES:**

POSSIBLE IMPROVEMENTS IN THE OPERATIONAL PROGRAMMES REGARDING THEIR SUPPORT FOR PUBLIC DRIVEN INNOVATION HAVE NOT BEEN IMPLEMENTED YET

1. FINANCING/PREFINANCING **PREPARATION OF PPI/PCP PROJECTS** AND INNOVATION PROCUREMENT PROCEDURES (NOT ONLY PREPARATION OF THE APPLICATION, BUT THE PROJECT ITSELF WHAT HAS SIGNIFICANT IMPACT ON UNDERTAKING IN PCP/PPI PROJECTS AND OTHER PUBLIC DRIVEN INNOVATION PROJECTS;
2. **SUPPORT TO BIDDERS** (POSSIBLE VENDORS) WHO WOULD BE INTERESTED TO SUBMIT A PROPOSAL ON AN INNOVATION PROCUREMENT TENDER CALL, BUT HAVE NO EXPERIENCE AND KNOWLEDGE ABOUT SUCH PROCEDURES AND PROCESSES;
3. OFFER **SPECIFIC SUPPORT TO ICT/IOT/AI** SMEs WHO ARE READY TO DELIVER INNOVATIVE SOLUTIONS WHICH ARE COMPATIBLE TO LOCAL, REGIONAL, NATIONAL AND EUROPEAN EHEALTH SYSTEMS CONNECTING VARIOUS CARE PROVIDERS AND PATIENTS AND OTHER STAKEHOLDERS

#### 1.2 RECOMMENDATIONS

As response to the key challenges the following recommendations were formulated during project implementation to provide future solutions:

- 1) **Strengthening cooperation and communication among different actors in home care with focused calls** for the key areas defined in sector development priorities in RIS3. As the majority of the OP resources are already allocated to open and forthcoming calls, even minor modifications in selection criteria could lead to results;

2) **Promotion research and innovation infrastructures and activities** is available in general, therefore **networking and project generation events specialized in home care**, health and other priority sectors in RIS3 could likely bring improvement. Financial resources to organize these events shall be ensured;

3) **The importance of quadruple helix cooperation can be acknowledged by giving high score/value to this one among selection criteria.** Lead applicants from business, research and HEI side should be aware of the opportunities and strength of cooperating with public bodies and end-users, especially patient, care giver and payer side; Furthermore, innovative solutions for involving and paying/reimbursing families (as care receivers and informal care providers) should get priority in order to help finding adequate answers to the challenges of partial lack in purchasing power for homecare products and services;

4) It is important to **let applicants define the legal form of their quadruple helix cooperation and partnership free.** Centrally predefined legal forms, viz., may increase useless administrative or bureaucratic burdens in effective and efficient implementation of the projects.

5) In addition, **improvement of monitoring procedures** - by collecting information how needs identified and experiences shared by formal and informal caregivers and other end-user parties were taken in consideration and utilized during project implementation and maintenance – could be a considerable step ahead in those cases when quadruple helix cooperation was not required originally in the calls;

6) **Calls** which have more budget allocated than eligible applications can absorb, but should have a considerable contribution to the performance indicators of the OP, **can be modified by changing both their focus area and selection criteria.** **Eligibility of open innovation services and cooperation with all stakeholders in the quadruple helix can contribute to the success of GINOP-calls promoting industrial parks** for instance. **Smart specialization** (e.g. in homecare, health industry or other RIS3 priorities) **can be fostered through selection criteria.** In this way important, but underperforming intervention areas may get chanced to close-up;

7) **Synergies with other OPs and funding mechanisms** could be exploited if focus areas and selection criteria in GINOP calls would consider and focus on the aims and results of projects funded by other tools. Concentrating on some special markets in RIS3 priority sectors such as health - including homecare – may offer gains in effectiveness on implementing the OP after performance reserve of the PAs might be used to open new calls in the well performing intervention areas too. Markets emerging and expanding thanks to the development of human capacities, methods, protocols and infrastructure in e.g. **e-health, m-health, tele-health, one-day surgery or integrated and home care need more and more innovative solutions to provide equal access and better quality to a wide range of population affected by the aging trend and the progress in deinstitutionalization.** Promoting innovation activities which deliver uptake of research results by identifying specific needs (e.g. in homecare) that could be already satisfied (thanks to new research outcomes) and make production or products/services more effective, can be combined with actions building bridges between OPs.

### 1.3 SELECTED GOOD PRACTICES:

As part of the project implementation good practices (GPs) were collected by the partnership and discussed and approved by the partners. We in AEEK selected four relevant ones from the list of the collected GPs. Selected GPs offer replicable elements and methods for involvement of end-users and informal and formal carers to design, develop and implement new technologies for home care.

New projects may be initiated based on these elements and methods, however, they can be and must be applied and redesigned to fit the specific Hungarian legal, social, infrastructural, institutional and market conditions, existing quality and level of technological services etc.

The following Good Practices were selected:

#### **2.05 Bonification of projects´ evaluation targeting societal challenges including Health, Demographic changes and Well-being (PT)**

Good practice of management of Operational Programme that gives direct support in evaluation procedure to projects targeting health related challenges.

## **2.06 Evaluation bonus for addressing horizontal priority “Health for all” (LIT)**

Good practice of strategic focus of Operational Program that supports initiatives in specific industry segments that are cross-sectorial – in this example health - by giving them direct support in evaluation procedure.

## **2.07 Tele-hippocrates (CY) Unified telemedicine network of Greece and Cyprus, with integrated broadband satellite and land (wired) networks**

Good practice of project involving large cooperation of various actors being initiated by the big public hospital that is also the owner of the innovative product and service.

## **2.09 Check Point Cardio (BG)**

Good practice of a telemedicine monitoring innovation project initiated by public hospital involving other organizations.

### **2. Action (please list and describe the actions to be implemented)**

We have grouped the four good practices quoted above in two scenarios, which basically make the ground for the actions in the field of PUBLIC DRIVEN INNOVATION. We have defined altogether 4 versions under the two scenarios (1 primary and 1 backup in each scenario). Actions are defined so that if the more ambitious, primary version (e. g. launching a new call) proves impossible to be implemented than efforts will be shifted to the backup (less ambitious still fully relevant) version defined below.

## **2.1 Scenario 1 - Transferring combined elements of “Growth of the quality of medical services in rural areas using a telemedicine informatics system (PT)” and “Bonification of projects’ evaluation targeting societal challenges including Health, Demographic changes and Well-being (LT)”**

Effective use of ESIF in RDI schemes under the EDIOP (GINOP) and CCHOP (VEKOP) needs focused actions that foster and assist progress in deinstitutionalization contributing to make health and social systems and insurance cover more sustainable and patient friendly in order to utilize opportunities offered by strategical projects in the development of national e-health system and improvement of quality of medical services supported directly by Ministry of Human Capacities via Human Resources Development Operational Programme 2014-2020.

Learnings, validated solutions and ready-to-replicate results of good practices in management of Operational Programme that gives direct support in evaluation procedure to projects targeting health related challenges may deliver additional value to project selection in RDI action.

### **2.1.1 PRIMARY VERSION IN SCENARIO 1:**

**The proposed action is launching a new call under EDIOP PA1 with the working title “Support to setting up Living Labs” with potential combination of refundable assistance from EDIOP PA8** (Type 1 improvement). In the healthcare industry, the features of an (even smart) tool can be characterized by the user-friendliness and professional-content capabilities of a person in a situation that is modelling real-world circumstances. For example, transparency, easy understanding and handling, wear / portability, life and data security, packaging, and aesthetics can be a key issue. Real-time and accurate information, interactive communication, and information technology for the healthcare provider, data and system security, capacity requirements, remote connectivity and remediation, etc. for the healthcare professionals can be important. However, this open innovation model has been little developed in Hungary, especially in the healthcare industry with significant reserves, in comparison with the needs, and is therefore encouraged to support its expansion. To this end, we need to create an organized framework, in which partners have the opportunity to open an exchange of views and a full mapping of realistic possibilities. One of the most important questions is whether a new technology or product will meet with real needs, possibly broadly satisfied. In the health sector (and not only in the public funded system, but also on all insurance-funded schemes), it is of particular importance that new products and services resulting from development and innovation flow properly to the

users. In order to address this challenge, living labs should be established in Hungary. The living lab is a research concept. A living lab is a user-centered, open-innovation ecosystem, often operating in a territorial context (e.g. city, agglomeration, region), integrating concurrent research and innovation processes within a public-private-people partnership. The concept is based on a systematic user co-creation approach integrating research and innovation processes. These are integrated through the co-creation, exploration, experimentation and evaluation of innovative ideas, scenarios, concepts and related technological artefacts in real life use case. These must be supported in the short and long term.

Potentially, the call could be placed under EDIOP Priority Axis 1. Beyond non-refundable grant, the proposed scheme could include refundable assistance funded from EDIOP Priority Axis 8, using part of the financial frame currently allocated to EDIOP-8.1.1-16 entitled "Supporting R & D & I activities of Enterprises Credit Program".

The Living Lab concept could be further supported by running Venture Capital Programmes like the EDIOP-8.1.3/B-1 Smart Specialization Risk Capital Program or the EDIOP-8.2.5-17 Digitization of capital stock program. In these schemes such companies could be preferred that are linked in their operations to Living Lab projects supported under Priority Axis 1.

### 2.1.2 BACKUP VERSION IN SCENARIO 1:

**If the launch of the new call does not prove feasible then the alternate action is the modification of the selection criteria of one of the running relevant calls under EDIOP PA1, PA2, PA8 (Type 1 improvement).** The following new selection criteria are proposed to be included in these calls/schemes:

- the project application includes formalised cooperation with end-users or representatives of end-users and activities include setting up and maintaining this cooperation (10-15% of total scores)
- the project application includes testing under real-life circumstances with end-users under a formalized cooperation (15% of total scores)

### **2.2 Scenario 2 - Transferring combined elements of "Tele-hippocrates (CY)" and "Check Point Cardio (BG)"**

Fostering and assisting big public hospitals to initiate identifying unmet needs and lead scouting, creating, valorising and uptake of ideas and solutions require good practices of involving large cooperation of various actors in open innovation. Elements of good practices can be utilized in programs aiming to accelerate the shift from hospital care to integrated outpatient and home care in order to foster telecare, remote care and telemedicine monitoring projects (consisting of harmonized service and technology innovation elements) initiated by a public a hospital involving other organizations.

#### 2.2.1 PRIMARY VERSION IN SCENARIO 2:

**The proposed action is launching two twin-initiatives in one call: on one side making the public sphere (as potential client on one side) and on the other side bidders (as potential contractors on the other side) ready to use PPI and PCP under PA2 in EDIOP (Type 1 improvement).**

As such the first initiative targets the public sphere and it would be entitled "**Preparation of an innovative public procurement procedure**".

PPIs and pre-commercial procurement (PCPs) should develop a strategy that assesses the risks involved and lays down the ways and means of avoiding, managing and reducing them, as well as the planning of processes for obtaining innovation and the management. (hereinafter referred to as the Innovation Acquisition Strategy – IAS).

In the IAS framework, therefore, it is necessary to lay down the following solutions, which provide the basis for each task:

1. Setting up an evaluating team;
2. Overview of the key stakeholders most important needs, interests and concerns;
3. Examine, analyze and suggest the fulfillment of the functions that meet the needs and interests of the selected stakeholders and fulfill their concerns, if necessary (definition of innovation needs);
4. To access, assess and evaluate the markets and their suppliers (and their products and services and supply chains) in the value chains;
5. To carry out legal considerations to determine possible procurement procedures and the cooperation, supplier, ownership and other contracts to be established;
6. Investigating the possibility of realizing a common procurement, framework agreement and a tender and project partnership;
7. Investigating and managing risks, exploring and evaluating potential financial and professional support, and seeking support;
8. Examination of feasibility and sustainability alternative solutions, cost-benefit analysis, value development (increase of function / cost ratio), making a pay plan taking into account life-time and life-cycle costs;
9. In the case of partnership implementation, finding potential partners, selecting the right partners, selecting a lead partner, clarifying tasks and responsibilities with partners and concluding an agreement;
10. In the case of support applications, setting up a tender team, preparing and submitting a tender;
11. Establish a project team and a steering group.

Activities to be carried out and eligible for a project under the action:

- Project preparation and application writing;
- Creating an Innovation Acquisition Strategy (IAS);
- Implementation of the preparation tasks defined in the IAS along the principles set out in the strategy;
- Continuous cooperation with the Public Procurement Authority;
- Project management, communication, dissemination and management;
- In the case of a partnership (consortium) for the joint procurement of several potential public procurers, the necessary activities for the establishment of the partnership and the operation of the partnership (to lead the consortium). The creation of a partnership (consortium) is not mandatory, the results of innovation procurement prepared in a given subject can be disseminated through dissemination activities with other public institutions

The second initiative targets the bidders and it would be entitled **“Support for Bidders Preparation and Participation in Innovation Public Procurement Processes”**.

The purpose of this tender scheme is to enable domestic enterprises, in cooperation with the relevant institutions of higher education and other R & D & I organizations, to be able to participate as a bidder in innovative public procurement with the use of EU funds. Due to successful innovation, suppliers' market competitiveness improves and can offer their products more and more marketable products and services at European level. In Hungary, unfortunately, there is not yet an adequate model that could serve as a basis for the successful design of systems that are already widely used in Europe and which are supported by the European Union (pre-commercial procurement - PCP or public procurement of PPIs) and implement it.

Activities to be carried out and eligible for a project under the action:

- Project preparation and application writing;
- Creating an Innovation Acquisition Strategy (IAS);

- Implementation of the preparation tasks defined in the IAS along the principles set out in the strategy;
- Continuous cooperation with the Public Procurement Authority;
- Project management, communication, dissemination and management;
- In the case of a partnership (consortium) for the joint procurement of several potential public procurers, the necessary activities for the establishment of the partnership and the operation of the partnership (to lead the consortium). The creation of a partnership (consortium) is not mandatory, the results of innovation procurement prepared in a given subject can be disseminated through dissemination activities with other public institutions

### 2.2.2 BACKUP VERSION IN SCENARIO 2:

**If the launch of the above two initiatives do not prove feasible then the alternate action is the modification of the selection criteria of EDIOP call 3.1.2-8.2.4-16 entitled “Supporting the marketing of products and services produced by micro, small and medium-sized enterprises in the ICT sector and their access to international markets” (Type 1 improvement).**

Currently the aim of this scheme is to improve the international competitiveness of the Hungarian ICT sector and to strengthen the export and export potential of micro, small and medium-sized enterprises operating in the Hungarian ICT sector in the field of software and information technology (IT) development. The action focuses on changing the project selection criteria to prefer such project applications that are linked to the health industry and specifically can be linked directly to outcomes of the HRDOP-1.9.6-16 call entitled “Electronic Health Sectoral Developments.” This HRDOP call aims at improving efficiency of the health sector and services provided to population. Main tools of the call: central service development and further development of EHCSS; setting up central framework for tele-medicine and tele-consultation, setting up imaging data-centre for tele-consultation, implementing tele-medicine pilot; utilisation of sectorial data; e-health competence development, business utilisation of functions; further development of the sectorial IT infrastructure. Outcomes in this HDROP call provide opportunities for SMEs applying under EDIOP call 3.1.2-8.2.4-16 to develop health-related technologies that can be directly linked with EHCSS using existing or new infocommunication solutions.

3. **Players involved** (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)

The following players will be involved in implementing the actions in the field of PUBLIC DRIVEN INNOVATION:

**ÁEEK, National Healthcare Service Center** is the initiator of the actions as an outcome of the HOCARE project. ÁEEK is a public institution established by the Government of Hungary and controlled by the Minister of State for Healthcare, Ministry of Human Resources. ÁEEK takes pro-active role pulling together other concerned players (stakeholders), managing the implementation of the action plan, organising meetings, events, delivering drafts of concept papers and collecting opinions and remarks of involved players.

**Ministry of Human Resources – Minister of State for Healthcare (MHR):** ÁEEK as a public organisation belongs to this Ministry. Therefore initiating actions related to EDIOP officially will be channelled through MHC. However, it does not mean that informal talks, workshops, events could not be organised by ÁEEK directly. MCH will be invited to take part in expert groups, workshops to provide remarks on the planned action.

**Ministry for National Economy – Minister of State for Economic Development:** development of health industry belongs to this State Secretariat as such they are responsible for defining and altering the thematic content of EDIOP calls. As such they are crucial player in realising the Action Plan. Therefore they will invited to all relevant event and workshops and their remarks will be taken into account.

**Ministry for National Economy – Minister of State for the Utilisation of EU Funds:** This State Secretariat includes the Managing Authority of EDIOP, which is implementing body of the new or altered calls under

EDIOP PA2. As such they are crucial player in realising the Action Plan. Therefore they will invited to all relevant event and workshops and their remarks will be taken into account.

**National Research, Development and Innovation Office (NRDIO, responsible body for S3):** NRDIO is responsible for the R&D&I policy in Hungary concerning design and implementation (with the exception of EU co-financed calls). Since the new/altered calls belong the R&D&I priority axis of EDIOP therefore their involvement may provide useful insights concerning the thematic content of the planned action.

**National Health Insurance Fund Administration (NHIFA):** The core activity of the National Health Insurance Fund Administration includes functions relating to the management of the Health Insurance Fund, including funding and reimbursement accounting, the maintenance of records, keeping financial accounts and fulfilling reporting obligations. It carries out procedures relating to the social security assistance of pharmaceuticals and medical aids and the adoption of health technologies. Since the proposed actions target the development of health industry technologies, tools that would be admitted preferably for financing from the National Health Insurance Fund Administration therefore their involvement is very important in the upcoming tasks related the implementation of the Action Plan.

**National Institute of Pharmacy and Nutrition (OGYÉI):** OGYÉI prepares supportive materials for decision makers on all level in health care, prepares national and international publications, posters and presentations, conducts health economic research, initiates legislative changes in the field of health technology.

**IFKA Public Benefit Non-Profit Ltd. for the Development of Industry (IFKA):** IFKA has been playing an active role in the economic, technical and innovation life of Hungary since 1990, bringing together the fields of logistics, quality assurance and environmental protection. Its extensive network allows us to operate as a bridging institution. IFKA accommodates both Hungarian and European Union objectives. It can bring considerable funding into play in the interests of its public benefit work. On the basis of experts and organisational competence IFKA participates in the development of comprehensive domestic strategies. The benefits of its programmes are used both at national and international level.

#### 4. Timeframe

##### Scenario 1 both versions and Scenario 2 both versions

We calculate with a 2-year-long timeframe for the implementation of the planned actions including the following activities:

Project management (24 months starting from April 2018)

Preparatory activities (9 months starting from April 2018): further investigation of the underlying good practices. the MA gathers the detailed information it needs from the underlying good practices using the existing partner contacts of AEEK from HOCARE with the inclusion of a study trip. Furthermore it includes stakeholder involvement on the planned action.

Implementation phase (12 months starting from January 2019): Designing the new/modified call with intense involvement of players through workshops, expert meetings and launch of the new/modified call. Furthermore it includes preparatory activities for the evaluation of the action (last 3 months).

Evaluation of action (3 months starting from January 2020) carried out by the MA building on first experience from operation.

Dissemination activities (24 months starting from April 2018)

#### 5. Costs (if relevant)

##### Scenario 1 both versions and Scenario 2 both versions

Project management: this is done by the MA on a regular basis. No specific cost is expected to incur on this

Preparatory activities: cost of study strip 3 MA colleagues for 3 days abroad: EUR 5000

Implementation phase: organisational costs of workshops and expert meetings: EUR 5000

Evaluation of action: this is done by the MA on a regular basis. No specific cost is expected to incur on this

Dissemination of activities: EUR 15000

Total cost is estimated at EUR 25,000.

6. **Funding sources** (if relevant):

**Funding source related to Scenario 1 primary version (launching a new call under EDIOP PA1 with the working title “Support to setting up Living Labs” with potential combination of refundable assistance from EDIOP PA8)**

EUR 20 million should be sufficient to pilot such a scheme in the remaining timeframe under the 14-20 financial period.

**Funding source related to Scenario 1 backup version (modification of the selection criteria of one of the running relevant calls under EDIOP PA1, PA2, PA8)**

Depending on the specific call in question the affected funding source ranges between EUR 30-50 million.

**Funding source related to Scenario 2 primary version (launching two initiatives making the public sphere (as potential client on one side) and bidders (as potential contractors on the other side) ready to use PPI and PCP)**

The current Hungarian legislation requires that a call's financial frame is at least EUR 3.3 million. Due to the nature of this call and based on first estimates this is a sufficient financial frame.

**Funding source related to Scenario 2 backup version (modification of the selection criteria of EDIOP call 3.1.2-8.2.4-16):**

The total financial frame of the call in question is EUR 33 million.

## **ACTION 3 FASTER TO MARKET**

1. **The background** (please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)

National Healthcare Service Center (ÁEEK) partnered with 7 other European organizations in the Interreg Europe HoCare project to boost delivery of homecare innovative solutions. HoCare aims at optimising Structural Funds investment to strengthen regional innovation system in the field of health home care. The engagement of the local stakeholders through the regional multi-stakeholders group (RMG) series of meeting organized in Cyprus offered the opportunity for identifying and draw the local situation (key challenges), as well as it produced the following suggestions (recommendations) with the objective to improve the selected Policy Instrument considering the transfer of key elements and learnings of good practises identified by HoCare partnership.

Below there is a summary of the lessons learnt in the area of FASTER TO MARKET during the project implementation which were split into 3 main parts alongside the following issues: (1.1) Key challenges, (1.2) Recommendations and (1.3) Good practices. This constitutes the basis for the implementation of our Action Plan in the field of FASTER TO MARKET.

### 1.1.KEY CHALLENGES:

The following key challenges were identified by AEEK and their stakeholders in the area of INNOVATION ECOSYSTEM – QUADRUPLE HELIX COOPERATION TO BOOST HOMECARE SOLUTIONS FASTER TO THE MARKET in Hungary during the project implementation:

1.PURCHASING POWER AT HOME CARE MARKET SHOULD BE MADE STRONGER in order to make the exploitation of the opportunities opened by the growing needs for new care services and products driven by the accelerating deinstitutionalization process possible. Long term financial plans and commitments are necessary as lack of financing and lack of planning is a main barrier to develop the otherwise adequate government intentions and strategy.

2.SKILLS, COMPETENCES AND CAPACITIES (!) OF THE USERS AND PUBLIC HAVE TO BE FOSTERED in order to enable their involvement in quadruple helix cooperation for scouting (reconnaissance, identification), creation, valorisation, testing and uptake of innovation. All the 3 areas shall be further developed as it is a main obstacle to boost home care solutions. There is – due to various but mainly financial reasons - also a general lack of staff which is a major issue which all developments in the health care - including home care – shall face with.

3.ENTERPRISES, RESEARCH ORGANIZATIONS AND HEIS SHOULD BE BROUGHT CLOSER TO THEIR INDIVIDUAL AND PUBLIC CUSTOMERS, and they should improve their capability to organize and manage QUADRUPLE HELIX COOPERATION in general and especially in home/remote care market. There is a clear lack of cooperation in the ecosystem which shall be generated - if otherwise not possible - by the financial resource holders. It shall be coupled with a capacity improvement to be able to cooperate in the quadruple helix as a new proposed cooperation form.

The following key challenges were identified in the area of the SUPPORT OF MARKET SUCCESSFUL INNOVATION DEVELOPED BY QUADRUPLE HELIX COOPERATION INSIDE THE RESEARCH AND INNOVATION PROJECTS IN THE OPERATIONAL PROGRAMME:

1. OPERATIONAL PROGRAMMES CONCERNED SHOULD OPEN SPECIFIC CALLS FOR PROJECTS OR GRANTS FOR PREDEFINED PROJECTS FOR QUADRUPLE HELIX COOPERATION IN GENERAL AND ESPECIALLY FOR HOME/REMOTE CARE MARKET. In Hungary, EDIOP encourages clustering and innovation partnership/cooperation among various enterprises and/or enterprises and other stakeholders on the research/HEI (and in some cases public) side. Both relevant sector OPs emphasise the significance of quadruple helix cooperation. However, no specific calls have been opened for quadruple helix cooperation yet. Furthermore there are only few and not too serious conditions among the evaluation criteria in the project selection processes. Hungarian OPs focus on fostering and supporting cooperation between business and research/HEIs or among international/global corporations, mid-cap companies and SMEs. Involvement of end users or public has minor importance currently, while co-operation among all the 4 helixes is only marginal. However, the accredited innovation clusters are good basis for the quadruple helix cooperation and these clusters have been supported by the Hungarian OPs (GVOP/ECOP, GOP/EDOP and GINOP/EDIOP) since 2004.
2. ACTIONS ACCELERATING DEINSTITUTIONALIZATION PROCESS should be followed (or combined) with measures fostering reconnaissance, identification, creation, valorisation, testing and uptake of innovation especially in home/remote care market. As mentioned earlier, OP funding schemes – calls – are currently not prepared for the financial support of the process which shall be modified in the future to meet the governmental intentions.
3. FOSTERED AND SUPPORTED INNOVATION SHOULD DELIVER SOLUTIONS HOW TO INCREASE FINANCIAL AND HUMAN CAPABILITIES OF THE USERS AND THE PUBLIC in order to make them possible to afford buying new home/remote care services.

#### 1.2 RECOMMENDATIONS:

The following recommendations were formulated during project implementation to meet the key challenges listed above and provide future solutions:

- 1) Strengthening cooperation and communication among different actors in home care with focused calls for the key areas defined in sector development priorities in RIS3.** As the majority of the OP resources are already allocated to open and forthcoming calls, even minor modifications in selection criteria could lead to results – such modifications can be initiated but shall be always agreed by the subsequent MAs,
- 2) Promotion of research and innovation infrastructures and activities** is available in general, therefore **networking and project generation events specialized in home care**, health and other priority sectors in RIS3 could likely bring improvement. Financial resources to organize these events shall be ensured either from ESIF or national resources to provide a forum for the networking and exchange of ideas and results for the participant institutions,
- 3) The importance of quadruple helix cooperation can be acknowledged by giving high score/value to this one among selection criteria** of the current – and planned – calls funded by OPs and parallel funding resources. Lead applicants from business, research and HEI side should be aware of the opportunities and strength of cooperating with public bodies and end-users, especially patient, care giver and payer side; Furthermore, innovative solutions for involving and paying/reimbursing families (as care receivers and informal care providers) should get priority in order to help finding adequate answers to the challenges of partial lack in purchasing power for homecare products and services, otherwise governmental intentions and policies may not be implemented as planned or it may happen that even fail to meet the policy intentions,
- 4) It is important to **let applicants define the legal form of their quadruple helix cooperation and partnership free**. Centrally predefined legal forms, viz., may increase useless administrative or bureaucratic burdens in effective and efficient implementation of the projects. Applicants shall be able to come up with viable –

although also legally responsible – form of operation and they shall have the freedom to find the most suitable forms of cooperation also concentrating on the viability issue,

5) In addition **improvement of monitoring procedures** - by collecting information how needs identified and experiences shared by formal and informal caregivers and other end-user parties were taken in consideration and utilized during project implementation and maintenance – could be a considerable step ahead in those cases when quadruple helix cooperation was not required originally in the calls,

6) **Calls** which have more budget allocated than eligible applications can absorb, but should have a considerable contribution to the performance indicators of the OP, **can be modified by changing both their focus area and selection criteria. Eligibility of open innovation services and cooperation with all stakeholders in the quadruple helix can contribute to the success of EDIOP-calls promoting industrial parks** for instance: as this calls put an emphasis on service development instead of basic infrastructure in the industrial parks. **Smart specialization** (e.g. in homecare, health industry or other RIS3 priorities) **can be fostered through modified / enhanced selection criteria.** In this way important, but underperforming intervention areas may get a chance to close-up;

7) **Synergies with other OPs and funding mechanisms** could be exploited if focus areas and selection criteria in EDIOP calls would consider and focus on the aims and results of projects funded by other tools. Concentrating on some special markets in RIS3 priority sectors such as health - including homecare – may offer gains in effectiveness on implementing the OP after performance reserve of the PAs might be used to open new calls in the well performing intervention areas too. Markets emerging and expanding thanks to the development of human capacities, methods, protocols and infrastructure in e.g. **e-health, m-health, tele-health, one-day surgery or integrated and home care need more and more innovative solutions to provide equal access and better quality to a wide range of population affected by the aging trend and the progress in deinstitutionalization.** Promoting innovation activities which deliver uptake of research results by identifying specific needs (e.g. in homecare) that could be already satisfied (thanks to new research outcomes) and make production or products/services more effective, can be combined with actions building bridges between OPs.

### 1.3 SELECTED GOOD PRACTICES:

As part of the project implementation good practices (GPs) were collected by the partnership and discussed and approved by the partners. **AEEK selected two relevant ones from the list of the collected GPs.** Selected GPs, in both the following scenarios, offer replicable elements and methods for involvement of end-users and informal and formal carers to design, develop and implement new technologies for home care. Unfortunately, there were no finished and impactful good practices on the strategic focus or management level of the Operational Programmes relevant for the topic that could be available proved for success from the countries of the HoCare project. However **the selected good practices in generation of innovation in home care through bringing innovative home care solutions quicker to the market by using quadruple-helix approach are all project based and have been identified during the HoCare project.**

New projects may be initiated based on these elements and methods, however, they can be and must be applied and redesigned to fit the specific Hungarian legal, social, infrastructural, institutional and market conditions, existing quality and level of technological services etc.

The following Good Practices were selected:

#### **3.04 EkoSMART (SLO)**

The project is focused to bring to market sustainable integrated home care services nationwide. It has allocated a lot of effort to detect all possible barriers and to overcome them. Therefore, from the beginning

there is a **strong collaboration between all four helixes**. Project has a **very strong focus to intensively test the product** and successfully bring it to the national market.

### **3.07 Psiprof (PT)**

Good practice of a web platform development by **taking into account all four helixes needs**. The solution offers a **convenient, safe and anonymous way to find and consult professional psychologists**. It is ready for implementation in a domestic and international market.

This action plan is developed as an adequate response to the key challenges following the recommendation and building upon the selected Good Practices.

## **2. Action** (please list and describe the actions to be implemented)

The good practices form one scenario each, which basically make the ground for the actions in the field of FASTER TO MARKET. We have defined altogether 4 versions under the two scenarios (1 primary and 1 backup in each scenario). Versions are defined so that if the more ambitious, primary version proves impossible to be implemented than efforts will be shifted to the backup (less ambitious still fully relevant) version defined below.

### **2.1 Scenario 1 - EkoSMART (SLO)**

The scenario shows that solutions and experiences in allocating effort to detect all possible barriers and to overcome them are important success factors of effective innovation. Involvement of key stakeholder groups to identify real needs, interests, resistances and obstacles is necessary to be able to develop products and services that can be brought to market quickly. **Strong collaboration among all four helixes enables innovators of home care sector to develop integrated services and products sustainable nationwide**. A strong focus on intensive testing of innovated products and services adds such a value to the innovation that is acknowledged in successful entry to national or international markets.

#### 2.1.1 PRIMARY VERSION IN SCENARIO 1:

**The proposed version is the modification of the EDIOP-1.2.4-16 call entitled “Development of industrial parks”** concerning multiple aspects (Type 1 improvement). Currently the call supports the development of existing industrial parks and scientific and technology parks to improve their services and infrastructure but the absorption of the call is fairly moderate, which gives the opportunity for revising it to better address challenges identified in HOCARE. Below we make proposals on the modification of relevant parameter of the call:

Applicants: Currently the call does not allow consortia to apply – only single SMEs are allowed to apply that possess the “Industrial Park” or “Science and Technology Park” certificate. The proposal is to **open up the scope of applicants by letting consortia to apply, in which members of the quadruple helix are represented including demand side associations, public actors and HEIs and research institutes**. (SMEs with Industrial Park or Science and Technology Park certificate would still remain as a compulsory member of an eligible consortium.) Final recipients exploiting the benefits of winning project will be SMEs even with the extended applicant scope.

Supported activities:

The current call has a broad range of eligible activities including development of infrastructure, purchase of equipment and machinery, IT development, energy efficiency, project preparation, project management and marketing. Eligible activities have to serve the introduction of new services provided by the Industrial Park, Technology Park to its members. **Keeping the broad range of eligible activities, our proposal is that the call supports projects falling in the health industry or health related industry with preference given to projects dealing with home care or related issues. This way service development building on quadruple helix cooperation in the health industry will be the primary scope of the call and so the currently sector-neutral call would receive a distinct sectorial orientation.**

Selection criteria: The proposal is to give extra scores in the selection scheme in the following cases:

- The applying consortium invites AEEK to the project proposal (10% of total scores). Justification for the involvement of AEEK is that in the health and health related industries (and specifically in home care) AEEK is a core actor in the public sphere with the ability to reaching out to and mediating between all relevant stakeholders in the quadruple helix.
- Thematic scope of the project focuses on deinstitutionalization home care as a specific subsector of the health care sector (10% of total scores).

#### 2.1.2 BACKUP VERSION IN SCENARIO 1:

**The proposed backup version in Scenario 1 is modifying the selection criteria of the EDIOP-1.2.4-16 call entitled “Development of industrial parks” without the full revision of the call proposed in the primary action above (Type 1 Improvement).**

Selection criteria: The proposal is to give extra scores in the selection scheme in the following cases:

- The applying consortium invites AEEK to the project proposal (10% of total scores). Justification for the involvement of AEEK is that in the health and health related industries (and specifically in home care) AEEK is a core actor in the public sphere with the ability to reaching out to and mediating between all relevant stakeholders in the quadruple helix.
- Thematic scope of the project focuses on health industry or related industry (10% of total scores)
- Thematic scope of the project focuses on deinstitutionalization home care as a specific subsector of the health care sector (10% of total scores).

#### **2.2 Scenario 2 - Psiprof (PT)**

The scenario focuses on the **development of psychiatric and addictological care network** (for child, youth, adult and elderly care system) **aiming at increasing accessibility, prevention, network development and deinstitutionalization in Hungary. National e-health system development** (implemented in the same time) **would provide new possibilities for innovators to deliver new, renewed or integrated solutions and products** that could connect to and serve psychiatric and addictological care and the central e-health system. Learnings, validated solutions and ready-to-market or replicate results of the good practice may help satisfying special needs of patients, families and psychologists or addictologists.

#### 2.2.1 PRIMARY VERSION IN SCENARIO 2:

**The proposed version is launching a new call under EDIOP PA1 entitled “Cooperation, integration, networking” (Type 1 improvement).** The long-term objective of the call is to improve the efficiency of health care services, to change the process of health care services and to foster the use of cloud-based technologies. Owing to past projects and developments (funded from various sources including HRDOP, Social Renewal Operational Programme 2017-2013, Norway Grants, Swiss Contribution), the health sector experienced structural changes as a result of which significant market demand has emerged in favour of companies and other organisations developing new health care services or integrating existing services in an innovative way. To satisfy this market demand it is necessary that (A) health care service providers set up new patient care forms building on cooperation and (B) set up and apply patient care forms that become feasible due to technological changes (integrated and/or cloud-based virtual forms). **The main objective of this new call is to foster SMEs operating in health care and the related social sector (general practitioners, nutritionists, physicians, physiotherapists, nurses, caregivers, etc.) to set up and develop further new patient care forms/cooperation with each other and/or with health care institutions, health service financing organisations, employers using available or new methods/models, infrastructure.** Applicants can choose themselves the kind of model they want to follow and improve and as an expected impact of the call, SMEs operating in the health care sector become capable of joining such cooperations that develop new health care technologies or integrate innovatively existing ones.

**Eligible applicants:**

- State-owned or private health care service provider (including GPs, outpatient care and hospitals)
- Micro-, small and medium enterprises
- Universities
- Civil organisations

**Eligible activities :**

- project generation, project preparation
- thorough surveying and evaluation of demands, interest of key stakeholders (compulsory) that will strengthen the successful market entry of the chosen patient care model and of potential related innovations
- activities leading to choosing the most suitable cooperation patient care model (integrated and/or cloud-based virtual), consultation activities with the organisation developing and operating the model, further development of the model
- definition of services to be provided in the frame of the chosen model
- operation of the patient care model and provision of health services
- preparation of joining cooperations that develop new health care services or integrate existing ones in innovative ways using the chosen patient care model
- project management, communication, dissemination
- definition of the type of cooperation with actors needed for the project implementation, activities needed for setting up and operating a partnership.

**2.2.2 BACKUP VERSION IN SCENARIO 2:**

**The proposed backup version in Scenario 2 is a methodological change in the practice of preparing and publishing calls in PA1 and PA2 of EDIOP (Type 2 improvement).** The proposed new practice is that the EDIOP Managing Authority contracts AEEK for mapping, analysis and research activities before calls are designed to have an up-to-date understanding of needs, expectations of relevant stakeholders in the health

and health related industries. The justification for the involvement of AEEK in such a role is that in the health and health related industries (and specifically in home care) AEEK is a core actor in the public sphere with the ability to reaching out to and mediating between all relevant stakeholders in the quadruple helix and as such is able to map and survey the market and coordinate actors in all helixes.

3. **Players involved** (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)

### **Scenario 1 (both proposed versions) and Scenario 2 (both proposed versions)**

The following players will be involved in implementing the actions:

**ÁEEK, National Healthcare Service Center** is the initiator of the actions as an outcome of the HOCARE project. AEEK is a public institution established by the Government of Hungary and controlled by the Minister of State for Healthcare, Ministry of Human Resources. ÁEEK takes pro-active role pulling together other concerned players (stakeholders), managing the implementation of the action plan, organising meetings, events, delivering drafts of concept papers and collecting opinions and remarks of involved players.

**Ministry of Human Resources – Minister of State for Healthcare (MHR):** ÁEEK as a public organisation belongs to this Ministry. Therefore initiating actions related to EDIOP officially will be channelled through MHC. However, it does not mean that informal talks, workshops, events could not be organised by ÁEEK directly. MCH will be invited to take part in expert groups, workshops to provide remarks on the planned action.

**Ministry for National Economy – Minister of State for Economic Development:** development of health industry belongs to this State Secretariat as such they are responsible for defining and altering the thematic content of EDIOP calls. As such they are crucial player in realising the Action Plan. Therefore they will invited to all relevant event and workshops and their remarks will be taken into account.

**Ministry for National Economy – Minister of State for the Utilisation of EU Funds:** This State Secretariat includes the Managing Authority of EDIOP, which is implementing body of the new or altered calls under EDIOP PA2. As such they are crucial player in realising the Action Plan. Therefore they will invited to all relevant event and workshops and their remarks will be taken into account.

**National Research, Development and Innovation Office (NRDIO, responsible body for S3):** NRDIO is responsible for the R&D&I policy in Hungary concerning design and implementation (with the exception of EU co-financed calls). Since the new/altered calls belong the R&D&I priority axis of EDIOP therefore their involvement may provide useful insights concerning the thematic content of the planned action.

**National Health Insurance Fund Administration (NHIFA):** The core activity of the National Health Insurance Fund Administration includes functions relating to the management of the Health Insurance Fund, including funding and reimbursement accounting, the maintenance of records, keeping financial accounts and fulfilling reporting obligations. It carries out procedures relating to the social security assistance of pharmaceuticals and medical aids and the adoption of health technologies. Since the proposed actions target the development of health industry technologies, tools that would be admitted preferably for financing from the National Health Insurance Fund Administration therefore their involvement is very important in the upcoming tasks related the implementation of the Action Plan.

**National Institute of Pharmacy and Nutrition (OGYÉI):** OGYÉI prepares supportive materials for decision makers on all level in health care, prepares national and international publications, posters and presentations, conducts health economic research, initiates legislative changes in the field of health technology.

### **4. Timeframe**

### **Scenario 1 (both versions) and Scenario 2 (introducing new call under EDIOP PA1)**

We calculate with a 2-year-long timeframe for the implementation of the planned actions including the following activities:

Project management (24 months starting from April 2018)

Preparatory activities (9 months starting from April 2018): further investigation of the underlying good practices. the MA gathers the detailed information it needs from the underlying good practices using the existing partner contacts of AEEK from HOCARE with the inclusion of a study trip. Furthermore it includes stakeholder involvement on the planned action.

Implementation phase (12 months starting from January 2019): Designing the new/modified call with intense involvement of players through workshops, expert meetings and launch of the new/modified call. Furthermore it includes preparatory activities for the evaluation of the action (last 3 months).

Evaluation of action (3 months starting from January 2020) carried out by the MA building on first experience from operation.

Dissemination activities (24 months starting from April 2018)

### **Scenario 2 (back up version - EDIOP Managing Authority contracts AEEK for mapping, analysis and research activities before calls are designed)**

We calculate with a 1-year-long timeframe for the implementation of the planned action.

1<sup>st</sup> phase (6 months): preparatory workshops with the EDIOP Managing Authority on the defining the scope for the services provided by AEEK, human resources planning, budget planning, action plan

2<sup>nd</sup> phase (9 months): contracting AEEK, launch and completion of assignment

#### **5. Costs (if relevant)**

### **Scenario 1 (both versions) and Scenario 2 (introducing new call under EDIOP PA1)**

Project management: this is done by the MA on a regular basis. No specific cost is expected to incur on this

Preparatory activities: cost of study strip 3 MA colleagues for 3 days abroad: EUR 5000

Implementation phase: organisational costs of workshops and expert meetings: EUR 5000

Evaluation of action: this is done by the MA on a regular basis. No specific cost is expected to incur on this

Dissemination of activities: EUR 15000

Total cost is estimated at EUR 25,000.

### **Scenario 2 (back up version - EDIOP Managing Authority contracts AEEK for mapping, analysis and research activities before calls are designed)**

This is done by the MA on a regular basis. No specific cost is expected to incur on this

#### **6. Funding sources (if relevant):**

**Funding source related to Scenario 1 (primary version) - Modification of the EDIOP-1.2.4-16 call entitled “Development of industrial parks”**

EUR 30 million, which is the 80% of the total financial allocation to the EDIOP-1.2.4 call.

**Funding source related to Scenario 1 (back up version) - Modifying the selection criteria of the EDIOP-1.2.4-16 call entitled “Development of industrial parks”**

EUR 30 million, which is the 80% of the total financial allocation to the EDIOP-1.2.4 call.

**Funding source related to Scenario 2 (primary version) - a new call under EDIOP PA1 entitled “Cooperation, integration, networking”**

Using comparable examples from the past and first estimates on potential interest for such calls the proposed financial allocation from EDIOP PA21 is EUR 5 million.

**Funding source related to Scenario 2 (back up version) - EDIOP Managing Authority contracts AEEK for mapping, analysis and research activities before calls**

Technical assistance of the Operational Programme in subject (EDIOP), contractual volume EUR 0.7-1.5 million based on specification of tasks

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Stamp of the organisation (if available): \_\_\_\_\_