



ANNUAL PROGRESS & FINANCIAL REPORT

– *Template* –

Please send this report ELECTRONICALLY to the Central Management Unit (CMU) as well as a copy to the National Contact Persons (NCPs) of the coordinator and project partners

The coordinator of the project must submit this report within 60 calendar days after the end of each calendar year, on behalf of the consortium.

*If you have any additional question,
please contact the AAL CMU at CMU@aal-europe.eu,
or your NCP (see details on www.aal-europe.eu/aal-ncp)*

| | |
|------------------------|---|
| Report date | 29/11/2016 |
| Reported period | This report covers the period from 01/01/2016 to 30/09/2016 |
| Report No. | fourth annual report of the project |

| PROJECT | |
|---------------------------------------|--|
| Project full title | HEalthy Life support through COMprehensive Tracking of individual and Environmental Behaviors |
| Project acronym | HELICOPTER |
| Project No. | AAL-2012-5-150 |
| Project Website | http://www.helicopter-aal.eu/ |
| Project duration | <ul style="list-style-type: none"> • Starting date: 01/07/2013 • Termination date: 30/06/2016 - time extension 3 months: new end date: 30/09/2016 |
| Coordinator's name and details | Full name: Sandro Girolami E-mail address: sandro.girolami@meteda.it * Telephone number: +39 347 3572118 * <i>* Both e-mail address and tel. number must be provided.</i> |

| PROJECT PARTNERS | | | |
|--|---|----------------------|--|
| No. | PARTNER ORGANISATION NAME | PARTNER ORG. ACRONYM | AAL NATIONAL FUNDING AGENCY |
| 1 | METEDA S.r.l. (coord.) | METEDA | Ministry of Education, University and Research |
| 2 | Università degli Studi di Parma | UNIPR | Ministry of Education, University and Research |
| 3 | SC Vision Systems SRL | VSRO | UEFISCDI |
| 4 | University of Skövde | HIS | VINNOVA |
| 5 | Laboratorio delle Idee S.r.l. | LABIDEE | Ministry of Education, University and Research |
| 6 | Municipality of Skövde | SKOVDE | VINNOVA |
| 7 | Copenhagen Institute of Interaction Design | CIID | Danish Agency for Science, Technology and Innovation |
| 8 | Coöperatie Slimmer Leven 2020 | SL2020 | ZONMW |
| 9 | International Business School, Jönköping University | JIBS | VINNOVA |
| <i>Please add more lines if required</i> | | | |

1. ADMINISTRATIVE PROJECT PROGRESS

Report below any changes in administrative aspects of the project, excluding all financial aspects.

| CHANGE IN | No | YES | IF YES: REMARKS/EXPLANATIONS |
|--------------------------------|----|-----|--|
| <i>Duration of the project</i> | | X | <i>A three-months project extension has been requested and allowed by AAL-CMU.</i> |
| <i>Consortium composition</i> | X | | |
| <i>Project staff members</i> | X | | |
| <i>Other</i> | X | | |

2. DELIVERABLES SUBMITTED AND MILESTONES ACHIEVED DURING THE REPORTED PERIOD

Please list below the deliverables and milestones, using the same numbering as specified in the description of work.

In case of deviations from the description of work (work plan) regarding delivery dates, achievement of milestones or changes in planned outputs, please give details, and indicate whether and to whom (AAL NFA/NCP) the changes have been communicated.

| DELIVERABLE | DUE DATE | RESPONSIBLE PARTNER | DELIVERY DATE | REMARKS/EXPLANATIONS |
|--------------|--|---------------------|---------------|--|
| D 1.4 | M36-JUNE 16 AFTER THE PROJECT EXTENSION M36+3-SEPT16 | METEDA | 30.11.2016 | <i>DISSEMINATION REPORT</i> |
| D 5.3 | M36-JUNE 16 AFTER THE PROJECT EXTENSION M36+3-SEPT16 | SL2020 | 30.11.2016 | <i>RESULTS OF THE PILOTS</i> |
| D5.4 | M36-JUNE 16 AFTER THE PROJECT EXTENSION M36+3-SEPT16 | SL2020 | 30.11.2016 | <i>DEFINITION OF SHARED EXPLOITATION MODEL</i> |

| MILESTONE | DUE DATE | RESPONSIBLE PARTNER | ACHIEVEMENT DATE | REMARKS/EXPLANATIONS |
|------------|--|---------------------|------------------|--|
| M.5 | M36-JUNE 16 AFTER THE PROJECT EXTENSION M36+3-SEPT16 | HIS/UNI PR | 30.09.2016 | <i>RESULTS OF THE PILOTS</i> |
| M.3 | M36-JUNE 16 AFTER THE PROJECT EXTENSION M36+3-SEPT16 | CIID | 30.09.2016 | <i>DEFINITION OF SHARED EXPLOITATION MODEL</i> |

3. SCIENTIFIC/TECHNICAL PROJECT PROGRESS TO DATE

Please check appropriate box:

The project is in line with (or) deviates from the valid description of work (version/date:)
In the case of deviation, please explain how and why:

Provide a summary of developments since the last report, including:

- *The performance of the project consortium*
- *Technical achievements*
- *End-user services*

This annual report covers the time period running from January to September 2016, including the three-months extension.

Within this period, most planned activities come to their conclusion, so that more detailed and articulated comments can be found in the Final Report. Here, we may summarize as follow:

- Technical developments were finalized, allowing to implement pilots in the two hosting regions (Sweden and the Netherlands). Some delay in completion of technical work was experienced, leading to the extension request.
- Basic infrastructure (sensor networks, already sent to pilot sites late 2015) was deployed in user's homes during January and February. Sensor data collection then started in "unattended" mode (i.e., with no feedback to the user and no active modeling) to carry out a functional check and to assess behavioral "baselines". During this phase, some redesign was carried out, to better accomplish for emerged issues and user's needs (e.g., the toilet sensor firmware was updated to account for range calibration, based on actual findings).
- User interface (based on Android app) was upgraded, introducing features connected to sensor monitoring and communication related to diagnostic suspicion models. Also, custom physical interfaces (the "snowflake") were deployed and connected to the Helicopter network.
- Models of diagnostic suspicions, based on behavioral models, were completed and linked to the Helicopter central data server. Then the model parameters were calibrated and the model processing loop was started, checking for actual diagnostic suspicion occurrences.
- However, in the pilot run, no diagnostic suspicion was actually elicited. This is likely due to:
 - o the reduced timeframe of the experiment (also because of technical delays);
 - o the limited number of participants;
 - o good health conditions of the average pilot participants.

The altogether made the probability of an actual issue yielding a diagnostic suspicion quite low: a much larger-size test would have been necessary to ensure clinical evidence of results. Therefore, besides planning further activity (beyond the project end) to carry out a more meaningful clinical validation, we carried out further validation tests. In order to check for "false negatives" we carried out short interviews with users, to assess (compliantly with the limit of local privacy regulations) if any major medical issue occurred. Then, the responsiveness of the system to "true positives" (which we could not test on field) was validated both by means of both a simulated approach (based on artificial modeling of human behavior) and a "perturbative" one (i.e., by purposely introducing anomalies into a real user activity track). Such tests, although not fully replacing a larger-scale pilot experiment, well demonstrated the system functionality.

- Besides, further analyses were carried out on raw data coming from experiments, and procedure suitable for identifying meaningful anomalies and trends were devised, not requiring critical parameter calibration (apart from initial training).

- Such lack of actual diagnostic events also resulted in limiting the scope of the user interface test. I.e., little relevant information was available to the users, this somehow jeopardizing their interest and trust in the system. Again, a larger-scale pilot would greatly help in finalizing the user interaction strategy and tools.

In summary, the Consortium was able to reach most of the planned technical goals, with the overall infrastructure proving its full functionality. The main concept behind the project, consisting of the ability of inferring diagnostic suspicions from behavioral tracking, was proven to be feasible, although a complete field validation turned out to be out of the project reach, due to inherent limitation in the test size and duration. This also made an extensive test of the user interaction strategy less effective than expected: nevertheless, both app-based and physical interfaces were completed and functionally validated.

How many consortium meetings were held during the period covered by this report?

During the reporting period, the HELICOPTER Consortium held the following meetings:

- A general assembly was held in:
 1. Eindhoven (NL) , on March 16/17, 2016. The principal aim of the general assembly was to verify the development of the project and to plan next months. Particularly attention was dedicated to the technical aspect of WP5 Pilot & Exploitation.
 2. Roma (IT), on September 23, 2016, the final general assembly. The principal aim of the meeting was to discuss and evaluate technical components and pilots results, the sustainable exploitation of the pilots results and to check the project reports, particularly the documents of the final review.
- A Management Committee Meeting was held on June 28, 2016 through teleconferencing facilities. The aim of the meeting is to review of current status, with reference to the outcomes of the pilots and the corresponding data collection.

The above meetings fulfill the schedule defined in the proposal and the Consortium Agreement.

Besides such formal meetings, a number of subgroup meetings (either physical or virtual) were held, in order to proceed with technical developments.

4. IMPACT AND AWARENESS ACTIVITIES

PLEASE INDICATE IF THE PROJECT WILL PRODUCE/ACHIEVE OR HAS PRODUCED/ACHIEVED ANYTHING OF SPECIAL INTEREST FOR THE AAL JP (E.G. A PROJECT EVENT, PRESS RELEASES, PUBLICATIONS, PATENTS, DEMONSTRATORS, ETC.).

| Project participant responsible | Activity | Date | Medium and reference (press, event, newsletter, webpage, etc.) | Indicative coverage |
|---------------------------------|--|--|---|------------------------------------|
| SL2020 (NL) | Dissemination (Helicopter and the pilot) | 31-03-2016 | Regional Events | Regional coverage 100 participants |
| SL2020 (NL) | Brochure (SE,NL) | Sept '16 | Users information | |
| SL2020(NL) | Dissemination | Eindhoven May '16 | event to involve end users and make them aware https://www.youtube.com/watch?v=hNBcuNdKATU | Local event |
| SL2020 (NL) | Dissemination | St. Gallen (CH) September 27, 2016 | Event AAL Forum | 30 participants |
| HIS (SE) | Conference paper | June 2016 | 6th International Symposium on Ambient Intelligence AMI 2016 | 300 participants |
| HIS (SE) | Conference paper | Sant Julià de Lòria, Andorra September 19 - 21, 2016 | 13th International Conference on Modeling Decisions in AI 2016 MDAI2016 | 70 participants |
| UNIPR (IT) | Invited talk | Bari (IT) March 5, 2016 | 3 rd AGE Italian National Conference | 120 participants (geriatricians) |
| UNIPR (IT) | Conference paper | Nice (F) September 28, 2016 | 10 th World Conference on Gerontechnology (ISG 2016) | 150 participants |
| UNIPR (IT) | Conference Paper | Wuhan (CN), May 27, 2016 | 14 th International Conference on Smart Homes and Health Telematics (ICOST 2016) | 100 participants |

| | | | | |
|-------------|------------------|---------------------------------|--|------------------|
| METEDA (IT) | Conference paper | Fano (IT) October 8, 2016 | Diabetes Medical Congress AMD-SID Marche Region “Technology and home automation in diabetology” | 100 participants |
|-------------|------------------|---------------------------------|--|------------------|

5. OTHER COMMENTS

Report below any other issue or comment (optional)

(your text here)

**DO NOT FORGET TO FORWARD ALL UPDATES OF OFFICIAL PROJECT DOCUMENTS
(E.G. DESCRIPTION OF WORK, CONSORTIUM AGREEMENT, ETC.)
TO THE AAL CENTRAL MANAGEMENT UNIT AND NCP OF THE COORDINATOR AND
PROJECT PARTNERS.**

6. FINANCIAL REPORT

| PROJECT FINANCIAL DEVELOPMENT DURING THE REPORTING PERIOD | | | | | |
|--|--|---|---|--|---|
| PARTNER ORG. ACRONYM | <i>Actual cost of the project for the reporting period</i> | <i>Planned cost of the project for the reporting period</i> | <i>Actual effort in person/ months for the reporting period</i> | <i>Planned effort in person/ months for the reporting period</i> | Remarks |
| 1. METEDA | 117.000 | ***** | 7 PM | ***** | |
| 2. UNIPR | 88.600 | 87.000 | 19 PM | 10 PM | |
| 3. VSRO | € 53409.78 | € 53420.00 | 40 PM | 40 PM | |
| 4. HIS | 1828 | 1828 | 0,12 | 0,12 | Finalization |
| 5. LABIDEE | 2.921 | **** | 0,60 | **** | |
| 6. SKOVDE | 12.633 | 7.677 | 1,25 person | 1 | |
| 7. CIID | 13,224 | 44,872 | 1 | 3 | The work plan in the actual period was carried out partly in previous period. |
| 8. SL2020 | 359.987,93 | 410.043,00 | 28,1 | 32 | |
| 9. JIBS | 50.43 | **** | 5 | ***** | 1€=10.1 SEK |
| | | | | | |

| PROJECT PAYMENTS DURING THE REPORTING PERIOD | | | | | |
|--|-----------------------------------|---|--|--|--|
| Partner Organisation Acronym | Funding requested (if applicable) | Date of request sending (if applicable) | Date of receiving the money | Time between request and receive (if applicable) | Remarks |
| 1.METEDA | € 233.603,29 | ***** | 11.10.2016 (founding received € 134.306,12) | ***** | It's the first payment of the founding from the beginning of the project. It concern the period from July 2013 - February 2015 |
| 2. UNIPR | | ***** | 11.10.2016 (founding received € 110.121,96) | | |
| 3. VSRO (EC) | € 15913.46 | 29/07/2016 | 09/12/2016 | 4 months | |
| 3. VSRO (National grant) | € 20008.68 | 29/07/2016 | 17/08/2016 | 18 days | 1 € = 4.6 RON |
| 3. VSRO (EC) | € 2599.58 | 06/10/2016 | 09/12/2016 | 2 months | |
| 3. VSRO (National grant) | € 3268.86 | 06/10/2016 | 25/10/2016 | 19 days | 1 € = 4.6 RON |
| 4. HIS | ***** | ***** | ***** | ***** | All founding was received. The date of the last payment is 20151202 |
| 5. LABIDEE | | ***** | ***** | ***** | |
| 6. SKOVDE | 3.838 | 160122 | 160201 | | |
| 7. CIID | 30,588,19 | 2016-03-01 | 2016-03-14 | 14 days | |
| 8. SL2020 | ***** | ***** | ***** | ***** | In total 90% of the funding is received. The rest will follow after approval of project completion. |
| 9. JIBS | €29703 | **** | 160205 | **** | 1€=10.1 SEK |
| | | | | | |

If applicable, please differentiate between EC and national grant payments

ADDITIONAL INFORMATION

Please check appropriate box:

The financial progress of the project is in line with (or) deviates from the partner's Grant Agreements & Work Packages plans (personal efforts, other costs, etc)?

In case of deviation, please explain how and why:

Have you encountered or do you foresee any financial difficulties for the project realisation (e.g. payments, additional costs, other)?

It is worth mentioning that, despite Italian partners have duly and promptly fulfilled all formal requirements, the contract with the National Agency (MIUR) has been signed on February 16, 2015 while the project started on June 01, 2013 and the first payments has been received the 11.10.2016 (i.e., beyond the project end).
In order to avoid jeopardizing the whole project, Italian partners provided their effort anyway. Nevertheless, such situation clearly made the management of project activities much harder than needed.

Do you want to make any other comments in relation to the financial aspects of the project?