

# Deliverable 4.2

## Internal System Evaluation

<b>Project Number</b>	AAL-Call-2016-102
<b>Project Name</b>	LivingWell
<b>Duration</b>	June 1 <sup>st</sup> 2017 – May 31 <sup>st</sup> 2020 (36 Months)
<b>Coordinator</b>	Virtask
<b>Document ID</b>	D 4.2
<b>Release Number /Date</b>	V1.0/November 2018
<b>Checked and released by</b>	Released
<b>Document Type</b>	Project Deliverable
<b>Original Due Date</b>	February 2019
<b>Dissemination Level</b>	Public
<b>Main Editor</b>	E.Steenmeijer (VIR)
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### Abstract

This Deliverable describes which activities are taken by the project consortium to receive feedback and to integrate that feedback into the further development of Anne.

It contains the development roadmap and feedback cycle of the project.

First released version 1.0 Shows status, ready for rollout M3 in February 2019

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### The LivingWell project is Co-funded by the European AAL Joint Programme

<i>Version</i>	<i>Date</i>	<i>Changes</i>	<i>Name</i>	<i>Organisation</i>
0.1	2017-07	Initial Creation	DKB	VIR
0.2	2018-06	Check and update for M2	BOD	IHL
1.0	2019-11	Update for MTR	EST	VIR

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# 1 Executive Summary

This Deliverable describes which activities are taken by the project consortium to receive feedback and to integrate that feedback into the further development of Anne.

It contains the development roadmap and feedback cycle of the project.

# 2 Introduction

The AAL JP as a funding activity of the European Commission aims to force the development of innovative solutions for ageing well at home. A key concept of the programme is to generate solutions with a short time-to-market perspective. This should be achieved by proactive end-user involvement throughout the project. Another important part of the project plan for achieving a short time-to-market is the effective integration off the feedback from the end-users into the development cycle. The feedback integration plan gives a high-level overview of the structure that is given to the implementation of the feedback in the development cycle of the project.

The following chapters contain a summarization of the methods and structure that are used for the integration and development of Anne in the project.

# 3 Development cycle

For the registration and resolving issues, Virtask has designed processes for the adoption, registration and resolution of application issues during the execution of the project. These processes are integrated with the software development process. Due to this, it is clear which issues have been found during pre-testing and when executing end-users testing.

## 3.1 Overall development cycle

The overall development cycle looks like figure 1.

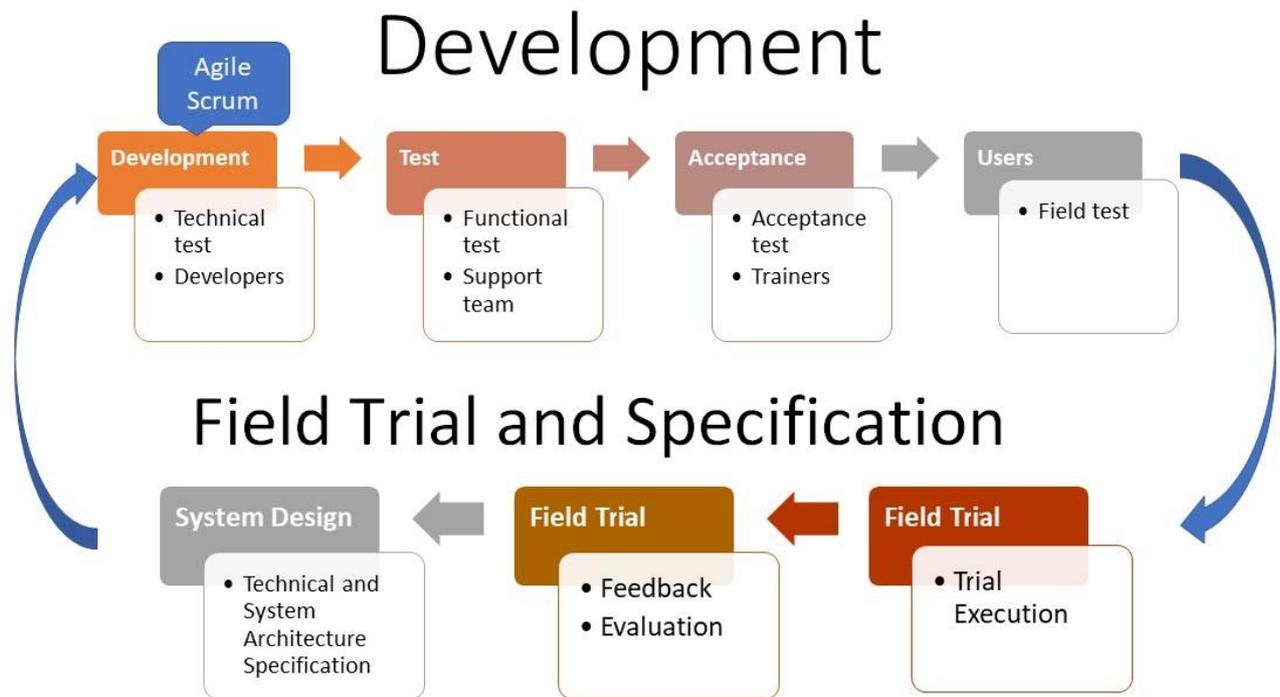


Figure 1: Development cycle.

### 3.1.1 Explanation of the overall development process

#### Development

The software developers develop new functionalities and solve issues.

#### Technical test

The developers perform the technical tests.

#### Functional testing

The functional tests are performed by the Virtask staff (Dennis, Theo, Annemarie) and supporters (Monique, Roelof, etc.) (10 persons in total).

This version is also tested by iHomeLab developers and testers.

#### Acceptance testing

Acceptance of new functionalities has been performed by Virtask so far.

Virtask believes that end-user organizations can determine whether the software is functional and stable enough to deliver to end-users.

That's why Virtask has made appointments with the trainers/coaches of end-user organizations as acceptance testers.

As soon as they give the green light, the new functionality can be rolled out to the end-users and testing can be started.

### Field testing

We ask the end-users to participate in the testing and give feedback. These tests last at least 6 till 8 weeks.

The opinions and test data of all users is the most important part of the project.

All the feedback from individual end-users/testers are collected and analysed by WIN and INR this will result in a new development plan.

## 3.2 Development Phases:

### 3.2.1 General Roadmap

The overall development is divided into 4 development phases. Shown in the graph below are the phases 3 and 4. The phase 0 and 1 development was closed earlier already.

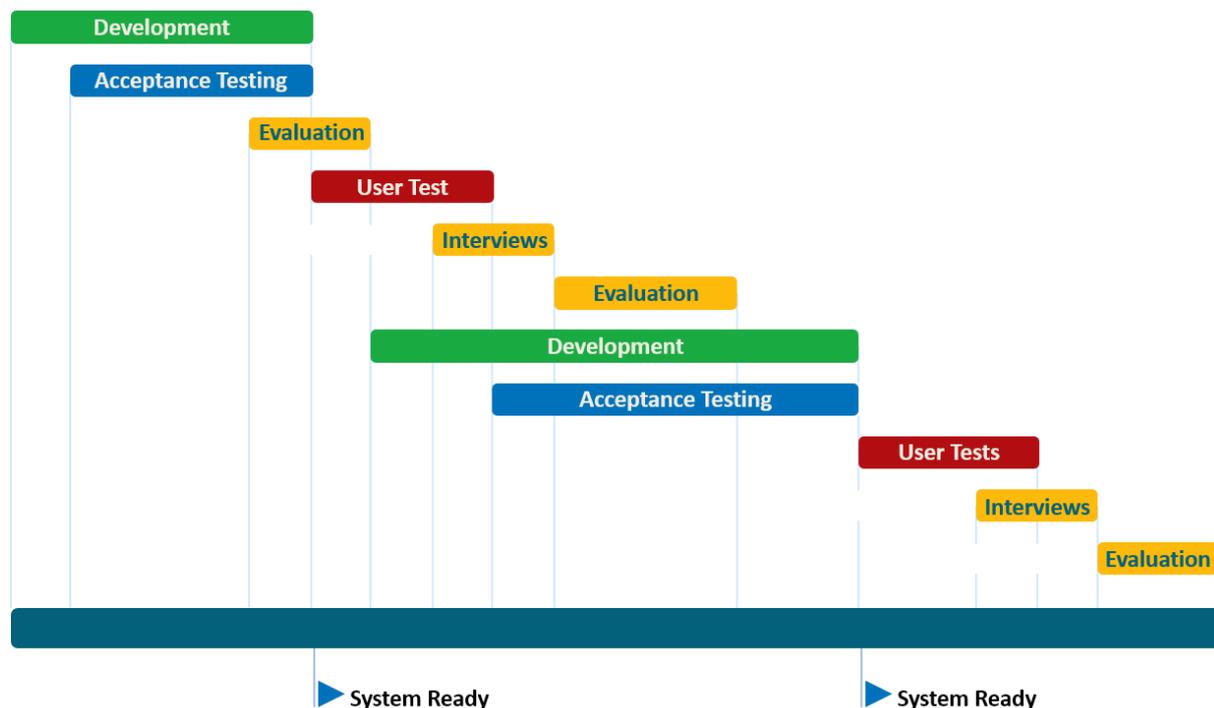


Figure 2: General development roadmap.

Figure 2 also shows that the development and acceptance tests are always happening at the same time. That way the developers receive immediate feedback on the fixes that they do and can respond quickly to eventual bugs that appear during the development process.

### 3.2.2 Acceptance testing

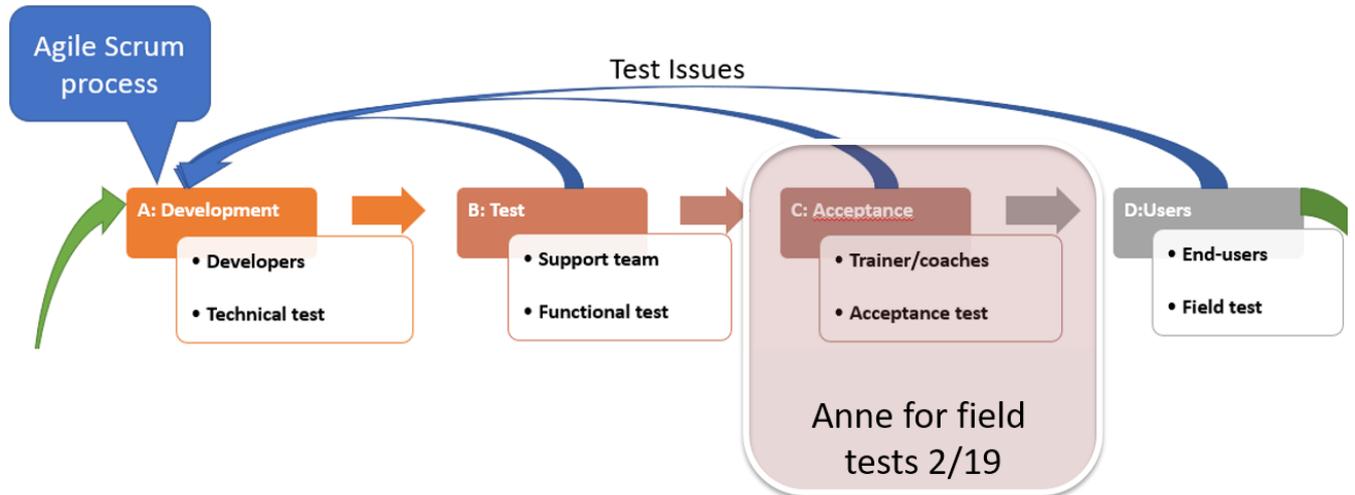


Figure 4: Acceptance test phase.

Figure 4 gives a clear picture of the feedback integration cycle that the software goes through before the end-user test begins. The project partners strive for a product that is stable before it reaches the end-users. This means that the development process is divided in different stages of development, testing and acceptance testing before the end-user test begin.

- The development happens in short iterations with a test build made available every 2 weeks. This test build always contains a new functionality as can be seen above.
- After the development of a feature, the first test will be done by the developers. After they tested the feature, it is sent to the testers of Virtask.
- If the testers off Virtask tested the software they will send it to the test group, one or more test users from each consortium partner organization.
- The test group has a week to test the new features with a test plan that is supplied by Virtask.
- After the test week, the test group sends the results back to Virtask. The results get bundled and Virtask divides them into two categories:
  - o Enhancements
  - o Bugs
- The bugs will be put in the overall bug fixing development round.
- The enhancements will be kept for the next phase.
- After the test rounds and development phases there will be a version that is stable for the end-users.

### 3.2.3 End-user test

In the previous chapter is explained how the developers will get to a version that is ready for the end-users to test.

If the version of Anne is ready for the end-user tests the following steps will be taken:

- The end-users will receive new documentation and the latest version of Anne and will start a test.
- In this period the end users will keep working with the actual system of Anne. During this period only killer bugs are fixed, to maintain the test conditions for all users constant.
- After the test period the research team will interview the end-users.
- The research team will bundle the results of the interviews in a report.
- The report clarifies the feedback from the end-users and will be used to extract new features and enhancements for the software.

### 3.2.4 Development and Testing for Protected Area Testing

The testing procedures described in the chapters above are valid for testing a SW-release, intended for use with multiple clients at various sites.

We face a different situation in the case of the protected area tests:

- The Anne-Flex development environment is used
- For each test there is a small project with carer / end user organisation / developer that work close together
- The number of tested persons is small (1 until a hand full)
- The tests are carried out under permanent supervision and guidance of carer / end user organisation
- The SW is installed on one dedicated device manually (per remote access) by the developer itself.

The development cycle for a specific test is agile and allows in several iterations testing by the end user organisation and developer. We distinguish here the following steps:

- Idea creation between end user organisation and carer (identification of specific topic to test (e.g. workflow management for short term memory loss assistance)
- Discussion between end user organisation and developer, to determine a potential testing flow
- Proposal of mockups (wire-frames) to the end user organisation (carer) with several iterations, until all parties are satisfied
- Implementation of first prototype with Anne-Flex framework and carrying out protected are testing flow by the developer in house.

- Remote installation to the end user testing device. Instruction and live demonstration with a remote session (Team Viewer and Skype) between developer and end user organisation.
- Rework if needed and go back to remote installation and discussion, until end user organisation is satisfied.
- Then the end user organisation tests together with the carer the proposed prototype. If needed another iteration loop (loops) are carried out
- If carer, end user organisation and developer agree on feature content and stability, the protected area test can take place.

Because Anne-Flex has a lot of specific, hard coded parameters, working stand alone and only has a very well defined small feature set, the SW complexity is much lower than in the fully fledged Anne system. Therefore, the testing/development approach described above is sufficient and efficient for the purpose of protected area tests.

## 4 Conclusions

Each development cycle starts with end-user feedback and ends with end-user feedback. Because of this the consortium partners are secured that they are developing a product that is in line with end-user expectations. And because of the three cycles wherein the feedback from the end-users is a constant the consortium partners are ensured that they are working towards a product that has real end-user value and