**Virtual Coaching Activities for Rehabilitation in Elderly**

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Deliverable

# D6.5 Test System

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## Document history

| Version | Date | Author/Editor | Description |
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| 0.1 | 28.09.2020 | Alvaro Martinez | Draft version |
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# 1 EXECUTIVE SUMMARY

This document introduces the test system demonstrator summarizing the results published in deliverables 6.1 to 6.4, consolidated into a fully testable system available online.

The test system is accompanied of a website simulating the 'journey' of a potential user that wants to create a clinical pathway from scratch and prescribe it later to a patient (the test system does not use real patients, just virtual ones). The prescription is made through the integration of the professional interface developed in WP3. At the end of the journey, the user can visualize the models generated vCare system properly expressed using the vCare Ontology developed in WP4.

The test system tools can be accessed at:

- vCare Tour website
    - http://pathways.vcare-project.eu/
- Pathway editor
    - http://demo-pathwayeditor.vcare-project.eu/
- Professional interface
    - https://vcare.ehealth-systems.at/m/
- Generated models (in RDF and graphic formats)
    - http://pathways.vcare-project.eu/generated/

## 2   INTRODUCTION

This deliverable contains the results obtained within the framework of task 6.3, 'implementation and technical proof phase', which reuses the results from deliverables 6.1 to 6.4 to create a demonstrator system which offers the 3-step approach depicted in figure 1: pathway modelling, pathway structuring and pathway exchange.
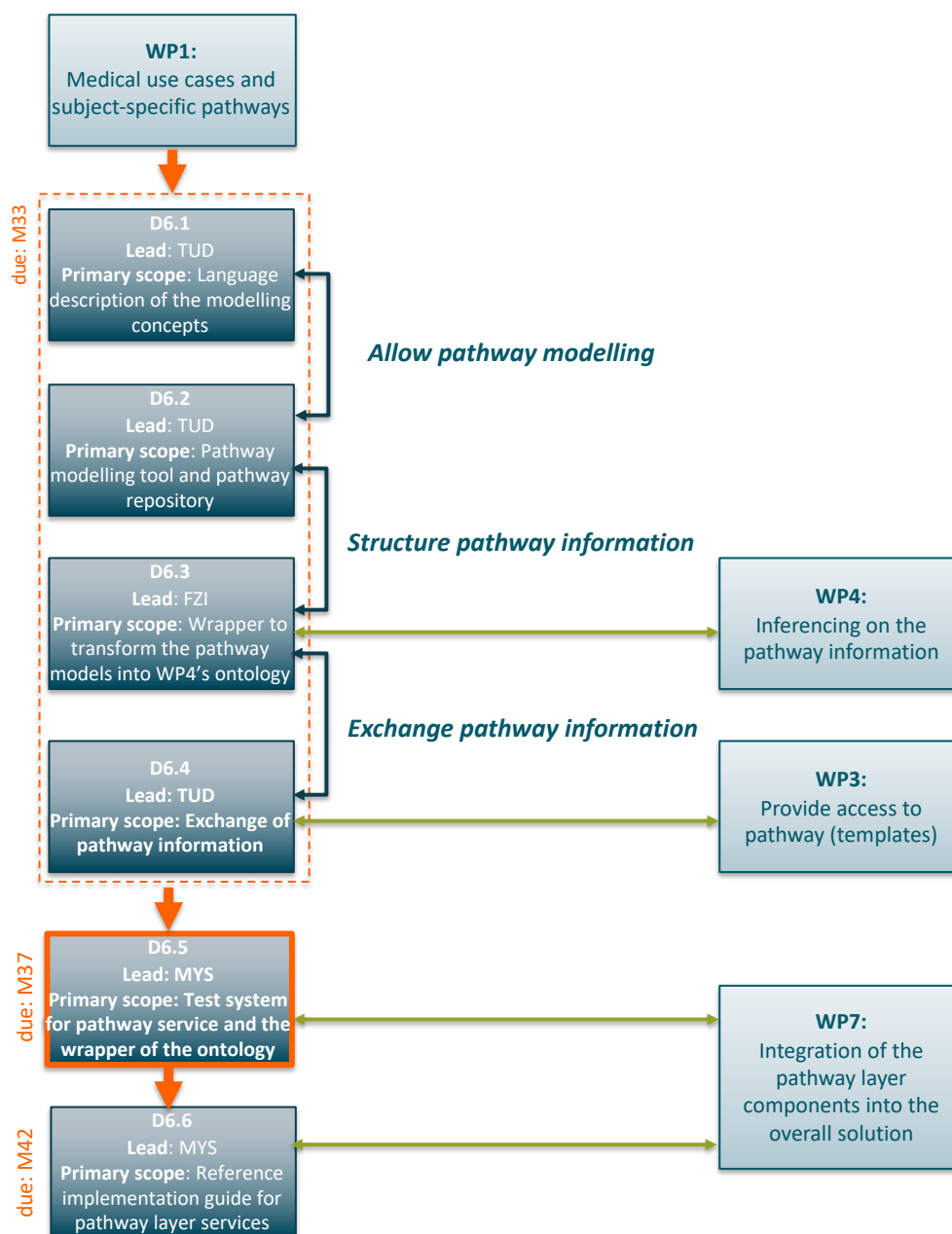


*Figure 1 - Relationship between deliverables in WP6*

The demonstrator itself is depicted in figure 2, where the user experience is explained in 8 steps:
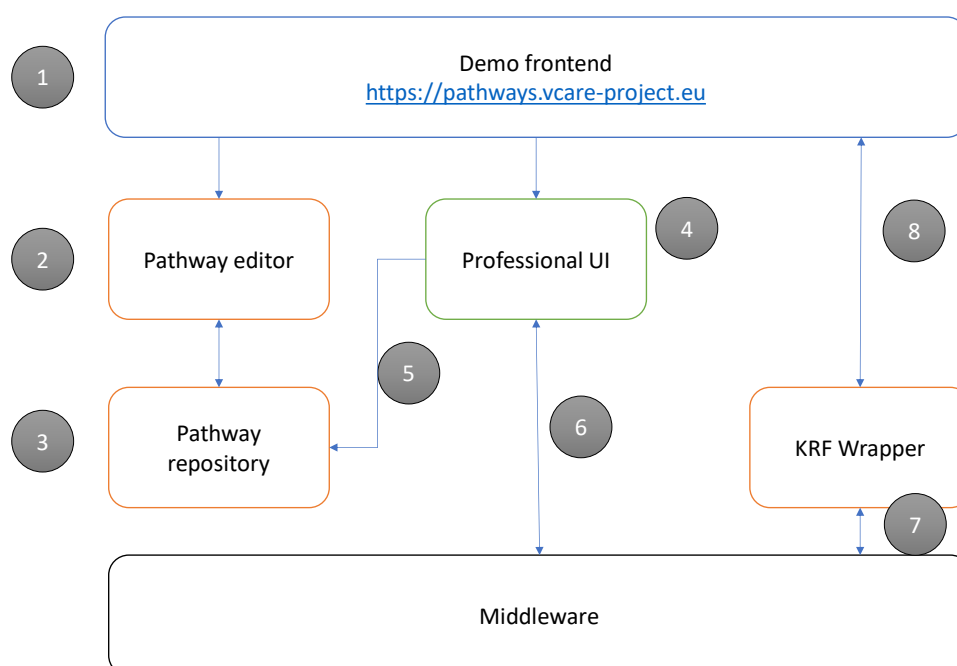
*Figure 2 - The demonstrator architecture*

***Step 1***: An interested user accesses the demonstrator via the 'guided tour' frontend.

***Step 2***: The user is invited to use the pathway editor to create its own pathway model

***Step 3***: The pathway is stored in the FHIR repository. This process is transparent to the user.

***Step 4***: The user is invited to access the professional portal and simulate the process of assignment of the created pathway to a virtual patient.

***Step 5***: The professional portal retrieves the pathway information from the repository (process transparent to the user).

***Step 6***: The professional portal personalizes the pathway according to the patient profile and notifies the assignment through the middleware (process transparent to the user).

***Step 7***: The knowledge representation framework processes the pathway assignment event and updates the patient profile (process transparent to the user).

***Step 8***: The user is invited to visualize the generated elements in the patient profile. These elements are presented in RDF syntax, which is not a human readable format, and in graphical notation using UML classes diagrams.

In the subsequent sections of this document, the demo system is explained.

## 3   THE DEMO WEBSITE

The demo website is the glue joining the different tools used to create and prescribe clinical pathways, guiding a non-experienced user in the background and explaining the basic concepts.

The website is structured in 4 main screens:

1) The concept
2) The modeller tool
3) The pathways instantiation process
4) The resulting models

### 3.1   THE CONCEPT

This section briefly introduces the overall concept of pathways applied within the framework of vCare project (see the snippet as presented in Figure 3).
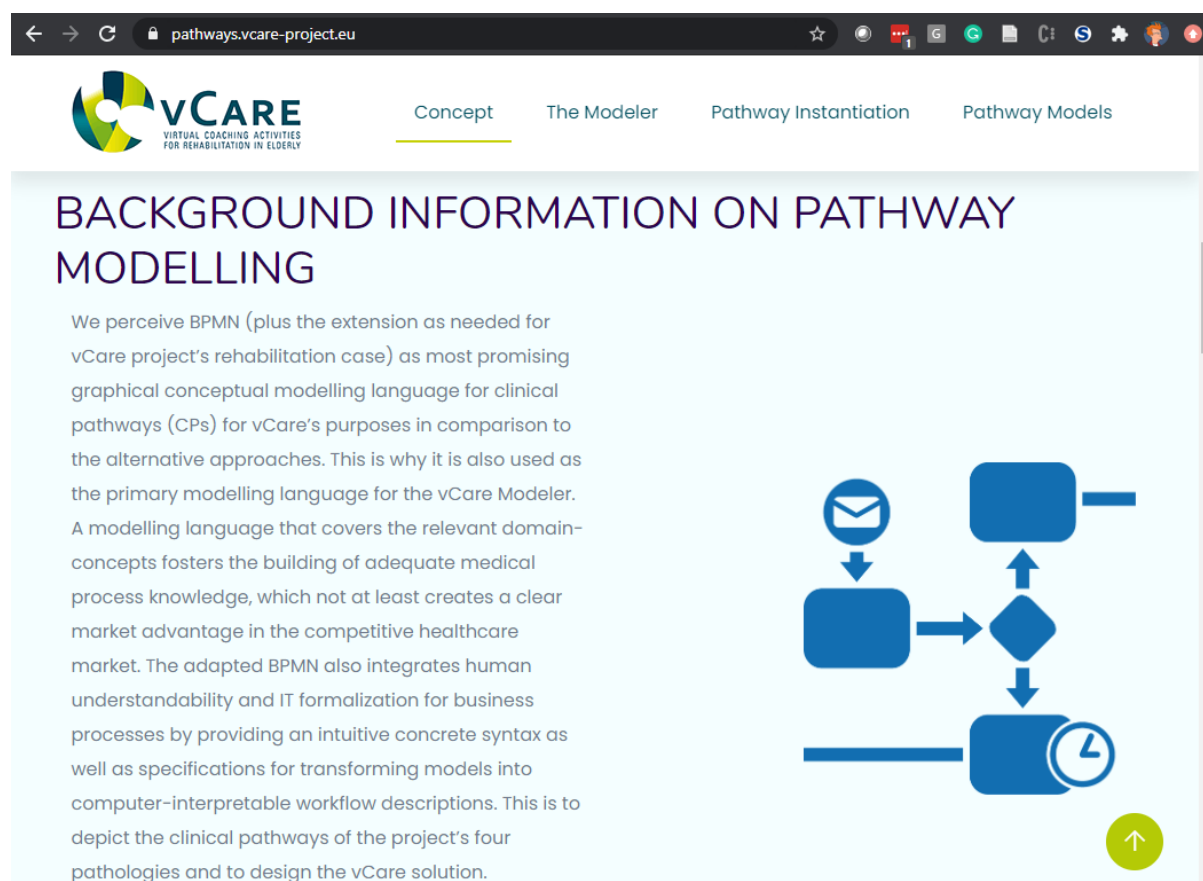


*Figure 3 - The concept screen*

### 3.2   THE MODELLER TOOL

The primary aim of the Pathways editor and Template management tool (the ***vCare Modeler***) is to fulfil a technical use case in terms of the pathway management. The development is part of the services of the overall vCare solution's pathway layer providing the capability to

graphically model and adapt rehabilitation care pathway templates (see the snippet as presented in Figure 4).
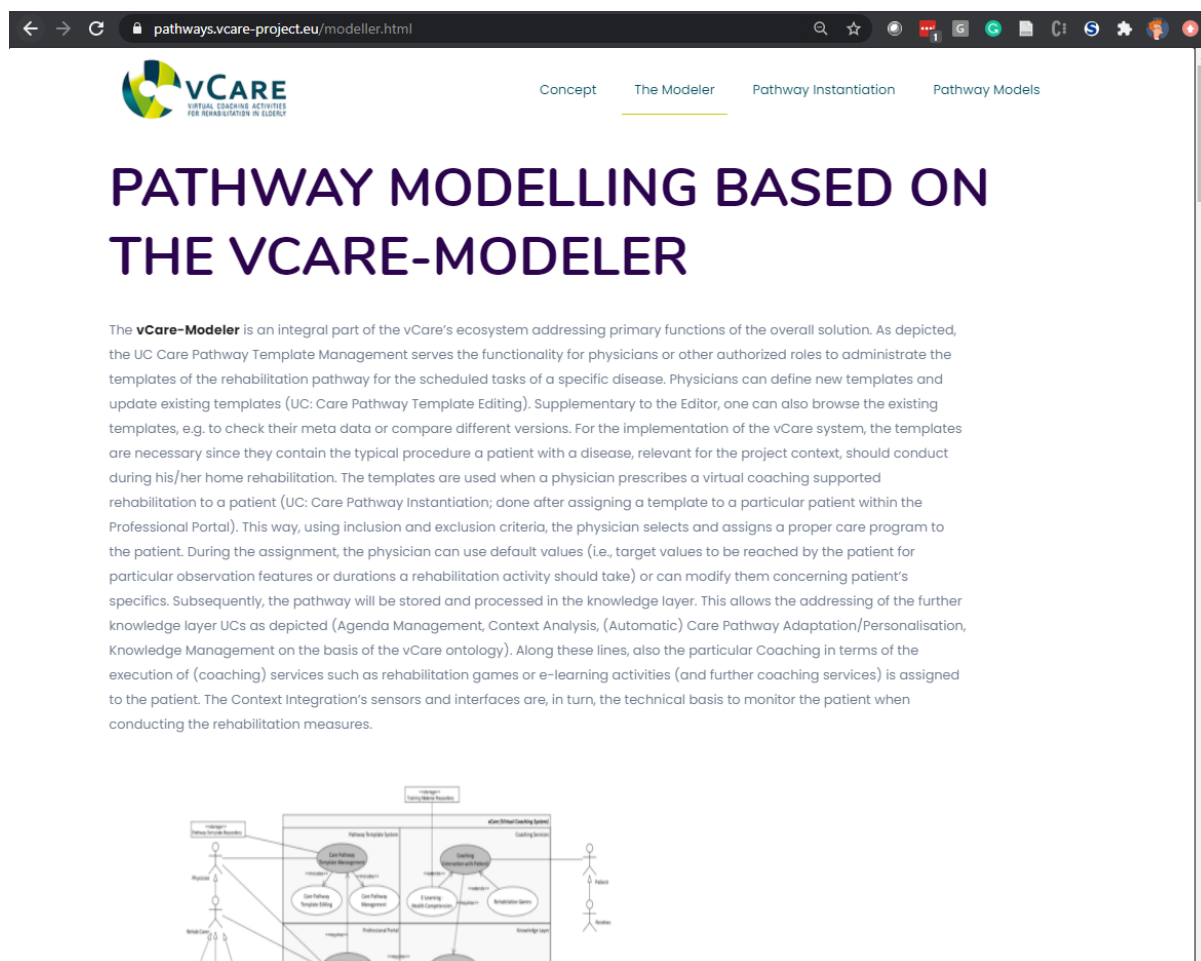


*Figure 4 - The modeller screen*

## 3.3 THE PATHWAY INSTANTIATION PROCESS

The second step in the process is the generation of a user profile and the assignment of the pathway defined through the editor. In this section we present the steps necessary to perform these operations through the Professional Portal (see the snippet in figure 5).

*Figure 5 - The pathway instantiation screen*

## 3.4 THE GENERATED MODELS

As result of the instantiation and transformation process (from graphically modelled templates to patient-specific instances) particular FHIR CarePlan resources are generated (see the snippet as presented in Figure 6).
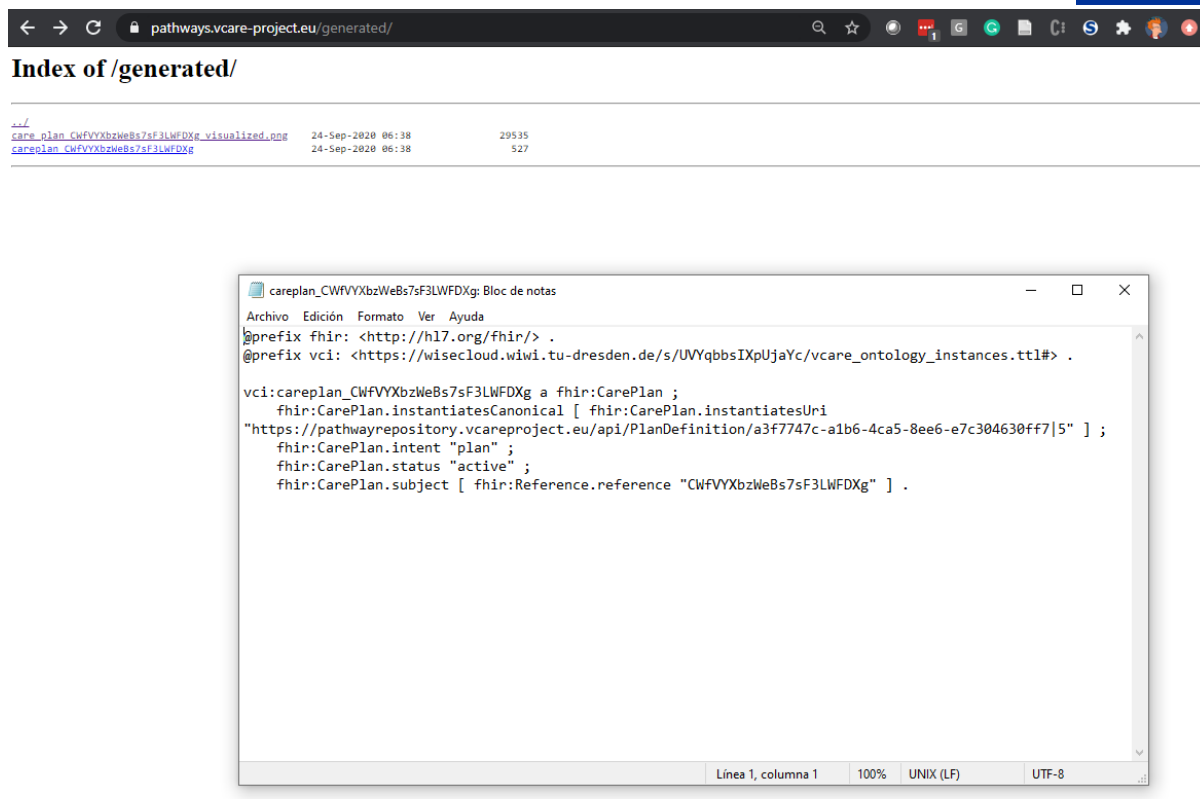
*Figure 6 - The pathway models screen*

Also, some background information on RDF modelling, FHIR and the wrapper of pathway information are provided (see the snippet as presented in Figure 7).
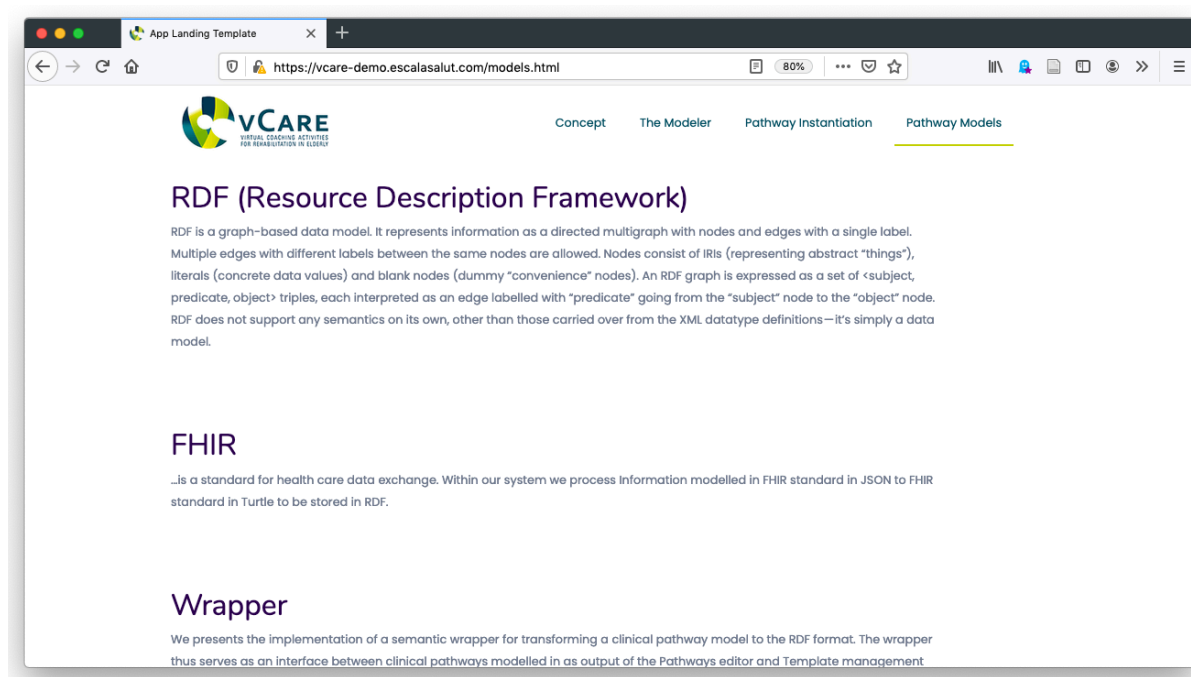


*Figure 7 - The Pathway models screen (2)*

# 4 CONCLUSIONS AND FUTURE WORK

## 4.1 CONCLUSIONS

In this document we summarize the outcomes from WP6 and we expose them to the public audience via a demonstrator system.

## 4.2 FUTURE WORK

The deliverable represents and covers the preliminary state right after the project's TechLab and just at the beginning of the LivingLab phase before having the chance to be tested with real patients. Further developments, integration works and iterative improvements are likely to happen in the course of the testing activities as foreseen during these lab phases. Thus, when we observe the necessity to change the care pathway modeler, the representation or transformation process of the pathway information, we will revise and adapt these.

As upcoming steps in WP6, the reference implementation guide (D6.6) for the pathway layer's components will be derived. Together with the demonstrator system this will then help to spread the idea of the pathways as a conceptual tool to structure and personalise the rehabilitation care. Also, this will allow other interested parties to understand the technical processes behind and to build up a similar approach.