

VirtualLife

WP1 Project Management and Coordination

D1.1.4 - Project Progress Report (Jul-Dec '09)

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1. Introduction

This document, entitled "Project Progress Report - 4", is the fourth of a series of periodic reports that VirtualLife's Project Manager is going to issue on a six-monthly basis as a management task within work package WP1, "Project management and coordination".

The purpose of this document is to provide an overview of overall status of the project for the reporting period and to emphasize achieved results, possible total or partial failure on one of the WPs, and to outline future correcting steps if needed.

In order to achieve such objectives each section (one for each WP) contains:

- (a) a summary of the objectives achieved in the reporting period;
- (b) possible problems raised during execution of the WP;
- (c) future steps left for the WP, possible corrective actions and lessons learnt that could be useful in future work.

2. List of Beneficiaries

Beneficiary no.	Beneficiary name	Beneficiary short name	Country
1 (Coordinator)	Nergal S.r.l.	NER	Italy
2	Cybernetica AS	CYBER	Estonia
3	Digital Video S.p.A.	DV	Italy
4	Geumacs	GEU	Romania
5	Mathematics and Informatics Faculty Vilnius University	VU-FC	Lithuania
6	Panebarco S.a.s.	PAN	Italy
7	TAVAE	TAV	France
8	Universität Göttingen	UGOE	Germany
9	Virtual Italian Parks	VIP	Italy

3. Project Objectives for the Period

The objectives of the reporting period were the following:

- to actively work on the development of the Nation Server;
- to carry on and finalize all actions related to the Correction Plan (see [1])
- to prepare the Intermediate Technical Review
- to finalize the VR Engine Prototype (see D5.2)
- to finalize the Final User Scripting Virtual Machine Prototype (see D5.5)
- to finalize Z-Server Interface SDK (see D5.6)
- to develop and finalize Avatar Communication Module Prototype (see D6.1)
- to finalize Camera Control Module (see D6.5)
- to carry on the developments related to WP6 tasks: Object Creation and modeling Module Development (T6.2), Avatar Management Module Development (T6.3), Environment Creation and Modeling Module Development (T6.4), Z-client GUI development (T6.7)
- to carry on the developments related to WP8 tasks: Virtual Nation Development (T8.2)
- to carry on initial developments related to WP9 tasks: Test Plan (T9.1)
- to carry on activities with respect to Dissemination and Exploitation (WP11)
- During the reporting period the following deliverables have been submitted:
 - D5.2 VR Engine Prototype (16th Jul 2009)
 - D5.5 Final User Scripting Virtual Machine Prototype (16th Jul 2009)
 - D5.6 Z-Server Interface SDK (16th Jul 2009)
 - D6.1 Avatar Communication Module Prototype (18th Sep 2009)
 - D6.5 Camera Control Module (16th Jul 2009)
 - Draft versions of D6.2 D6.3 D6.4 D6.7 have circulated in the VirtualLife internal mailing list.

4. Work Progress and Achievements During The Period

4.1. WP1 - Project Management and Coordination

4.1.1. Work package objectives

The overall objectives of WP1 work package on Project Management can be easily summarized in:

- To manage the financial issues and administrative tasks being the interface between the Commission and the Consortium.
- To ensure that the Project is proceeding timely and according to the plan in terms of deliverables and administrative tasks.
- To ensure that the Project is proceeding timely and according to the plan in terms of objectives and milestones.
- To co-ordinate the project.
- To ensure the optimal quality of all deliverables.
- To ensure the optimal communication flow within the consortium.
- To facilitate and promote working relationships among participating organisations and other relevant organizations or external groups
- To maintain the System Quality Assurance.
- To handle the IPR aspects

Those objectives should be pursued throughout the whole project, ie. up to M36.

4.1.2. Progress toward objectives

With respect to the objectives stated above the fourth semester did not face any major difficulty with respect to administrative tasks.

The original schedule for many of the deliverables in this semester has been altered in the Corrective Plan (see [1]) as a result of the comments and requests received during the review held in February. Some of the Deliverables due at the end of the third semester have been finalized and issued at mid of July.

From the project management point of view the semester has been rather intense. At the beginning the focus has been on the timely implementation of all the activities foreseen by the Correction Plan. The second part of the semester has been devoted to make the achievements of the Correction Plan more tangible in order to present them at the Intermediate Technical Review held in December. Among these activities, a new integration effort has been devoted to both produce a video-demo for dissemination purposes and to assemble a live demo for the review. Also a formal report on the Correction Plan Activities has been submitted to EC before the review.

During this developments several technical needs arose. The building system has been constantly improved to face them. Moreover a more robust bug-tracking system (based on OpenSource Trac Software) has been made available to partners.

With respect to communication, throughout the reporting period the Consortium has had weekly conference chat (except in August), where most of the issues have been tackled. A record of those chats is stored on VirtualLife private Wiki for reference. Most of the chat exceeded 2hour duration.

During the reporting period 3 Periodical Coordination Meetings have been held:

1. Tartu (CYBER): 1-2 July 2009
2. Rome (DV): 23-24 September 2009
3. Bruxelles: 2-3 December 2009

In the same period the following Management Report have been finalized and submitted:

1. D 1.2.6 Quarterly Management Report (covering period Oct-Dec 2009)
2. D 1.2.7 Quarterly Management Report (covering period Jul-Set 2009)
3. D 1.1.3 Project Progress Report (covering period Jan-Jun 2009)
4. Correction Plan Report (submitted on 24th November 2009)

4.1.3. List of previously unexpected difficulties

Overall there have been no major unexpected difficulties. Coordinating and carrying on the Correction Plan was clearly not a planned activity.

4.1.4. Plans for next period and lessons learnt

Next period will be devoted to support and improve facilities for integration and test of VirtualLife software. The coordination in the weekly chat as well as the constant review of Wiki organization will also be major tasks.

4.2. WP2 - Service and System Design

This WP has been finished at M6. Deliverables D2.1 has been rejected during the first review. A revised copy has been submitted on May 5th, containing the improvement requested during the review. A more detailed analysis of the requests and improvement can be found in [1] and [2].

Many actions outlined in the Correction Plan have been carried on during this reporting period.

Pursuant to the indications of the EC and of the reviewers (results for the 1st review, Feb. 2009), a more focused analysis of VirtualLife user needs has been designed. According to the work plan adopted by the consortium, the activity had to be implemented in two main phases, the results of the first general analysis phase on the needs of potential VirtualLife users were included in the revised delivery D.2.1. The same document set the path (or roadmap) for the next steps which were meant to obtain an in depth analysis of

user needs related to the focused scenario selected by the consortium (the "campus scenario").

This second phase of work started after the release of the D.2.1 and comprised the following tasks:

- Assessment of the activities (research and commercial) carried out at international level in fields related to distance education and new technologies, didactics and virtual environments, games applied to education. The aim was to identify a series of organizations (private and public) and individuals (free lance professionals, researchers) that could provide relevant feedback for the focused analysis and, in case, could be involved in further activities of the project.
- Elaboration of a focused questionnaire, in collaboration with the other consortium partners. Relevant inputs for the elaboration of the questionnaire came as well from the above mentioned analysis phase, particularly from the issues raised by studies and researches related to virtual worlds and education. Elaboration of a second version of the questionnaire to be posted on a specific Web site dedicated to on-line surveys (in order to adapt the questionnaire to the features and statistical analysis tools offered by the survey's Web site).
- Establishment of contacts with the selected organizations and individuals (approximately an overall number of 100 actors were involved) for the purposes of the inquiry.
- Monitoring of questionnaires results and transfer of feedbacks to consortium partners
- Analysis of the final results of the questionnaire, preparation of an analytical report and prioritisation of users' requirements.

4.3. WP3 - Virtual World Security and Communication Infrastructures

4.3.1. Work package objectives

This work package will provide VirtualLife with the security and network implementations that will allow it to function securely and reliably. The two deliverables will implement the security architecture described in D2.3 and the network architecture described in D2.2.

The security architecture will be implemented in a programming library used by other modules in VirtualLife. The library will provide the system with data structures and algorithms required to implement security measures.

The network architecture will also be implemented in a programming library. It will allow the nodes of VirtualLife to talk to each other using complex protocols. The main design goals of the library are performance and the capability to implement and handle complex protocols.

4.3.2. Progress toward objectives

As outlined in previous Project Progress Report (D1.1.3), although this WP was finished at M14, some activity in terms of support for the development of new services based on vlnet and vlsec library have been carried on both to support Correction Plan action and to allow proper development of chat module.

More specifically the vlsec and vlnet libraries were successfully used in the development of VirtualLife services:

- nation services such as friend list, online status, notification system
- peer-to-peer chat infrastructure
- peer-to-peer distributed index service (DHT)
- avatar ID card development
- guest login service

Effort has been spent in early integration of vlsec and vlnet into the VL Client software.

The results on identity management were published in the User Centric Media conference.

Vlnet has also been improved with new features such as easier API, thread safety, support for other low-level messaging libraries.

4.3.3. List of previously unexpected difficulties

The development has suffered some delay due to instability of the system during early functional integration of modules.

4.3.4. Plans for next period and lessons learnt

Some more improvements of both vlnet and vlsec are expected while remaining services are added to the system. Some small re-engineering is also foreseen to ease library usage.

4.4. WP4 - Virtual World Elements Design

This WP has been completed at M11.

4.5. WP5 - Virtual Zone D&D

4.5.1. Work package objectives

To design and develop the Virtual Zone as the fundamental component of the Virtual World under direct control of the end-user in the peer-to-peer network.

4.5.2. Progress toward objectives

During this reporting period, the fundamental component of the Virtual Zone, the virtual reality engine, and the Scripting Virtual Machine have undergone significant development in a number of areas:

- Enhancing the underlying networking support to be truly peer to peer.
- Enhancing the entity data representation structure and API to support well defined control by the client application.
- Integration of a Permissions framework that enforces authorization for certain actions in the Virtual Zone.
- Experimentation and incorporation of physics within the engine.
- Enhancement to the Scripting Virtual Machine, and development of several example script to support both video-demo and December review.
- Early integration with other modules in the VirtualLife framework.

In reaching these objectives, the following milestones were achieved:

- Submission of the D5.2 VR Engine Prototype documentation;
- Submission of the D5.5 Scripting;
- Submission of the D5.6 Z-Server Interface SDK documentation.

4.5.3. List of previously unexpected difficulties

Some unexpected difficulties were experienced during the reporting period, resulting in additional non-budgeted effort:

- The incorporation of p2p communications within the underlying framework has posed a number of difficult challenges, requiring several design and implementation iterations.
- The required permission framework was unexpectedly complex to understand, and hence to design and implement.
- Integration issues slowed down progress in a number of areas. Cross platform support proved to be especially difficult when developing with a libraries created by different partners.

4.5.4. Plans for next period and lessons learnt

The virtual reality engine is now in a sufficiently stable state to allow primary testing and integration. As such, no large developments will be added to this component. Plans for the future involve only resolution of bugs in the software, which we anticipate will be highlighted from active integration efforts.

Lessons learned:

- Valuable knowledge regarding the issues facing p2p virtual world communication has been gained during this period;
- The development of this package suffered from unstable requirements. This is a valuable lesson, to ensure a concrete set of requirements in order to clearly understand the underlying problem and solutions.

4.6. WP6 – Client D&D

4.6.1. Work package objectives

To design and develop the Client Application.

4.6.2. Progress toward objectives

In the reporting period the Client has seen major improvements in terms of supported features with respect to both the improved underlying engine and general framework as well as with respect to end user usability.

Below is a list of the most important activities related to client feature developed in this period:

- GUI design, development and tuning-up
- drag-n-drop object importer
- scene importer
- camera path importer (for the video demo)
- camera control module and its integration in the GUI
- improved 2D Overlay rendering
- in-world web-browser
- development of ID-Card and reputation system. Integration in the GUI
- GUI for the management of object permissions
- Administration menu for Zone and Nation Properties (with live screenshot buttons)
- Development of Avatar Editor and its integration in the GUI. The female avatar model has been improved with new morph targets and new animations while some poses from the existing animations have been adjusted.
- GUI for notification system support
- Development of chat system and its integration in the GUI
- Re-engineering of registration procedure
- Re-engineering of Nation Map Visualization module
- Modelling of the Campus Scenario, Campus scenes design and deploy, Campus Scenes Optimization and material editing

4.6.3. List of previously unexpected difficulties

The camera control module proved to be insufficient for the application at hand, and in particular the smoothing interfered with some client application functions. As such, it requires some re-engineering.

4.6.4. Plans for next period and lessons learnt

For the next period, now having a better grasp of camera control needs, the camera will be re-engineered.

4.7. WP7 - Virtual Nation Juridical System

4.7.1. Work package objectives

The objective of WP7 is to develop and technically implement a juridical system for the virtual community VirtualLife.

In order to define the legal framework within which the juridical system of a virtual community can be shaped this included, as a first step (D7.1), an extensive analysis of the status quo regarding the legal issues that arise in such a community with the focus being on the European situation. Areas of law that had to be considered were inter alia intellectual property, contract formation, e-commerce, protection of minors and data protection.

The second step (D7.2) involved the development of model contracts, namely the Supreme Constitution addressing the user/software provider relationship, i.e. a form of end user license agreement, and a Virtual Nation's Constitution outlining a Virtual Nation's law making ability.

Thirdly (D7.3), the rules of the Constitution will be translated into technical constraints in the next period.

4.7.2. Progress toward objectives

During the third and fourth quarter of 2009, UGOE continued research on current legal issues of virtual world platforms. The Correction Plan outlined the need to review and partly reformulate the EULA. However, it was not possible to formulate the final version of the VirtualLife and Privacy Policy due to the rather early stage of the VirtualLife Software. Certain parts have been examined for need of adaptation; other issues have been identified which have to be clarified according to the specifications of the final software.

4.7.3. List of previously unexpected difficulties

Due to the phase of development that still concerns some of the components of the VirtualLife software, a final assessment of the VirtualLife EULA (D7.2) was not feasible.

4.7.4. Plans for next period and lessons learnt

After the clarification of the open issues concerning the final version of the VirtualLife software, the EULA will be adapted in the running of 2010.

4.8. WP8 – Virtual Nation D&D

4.8.1. Work package objectives

To design and develop a Virtual Nation infrastructure that allows a secure safe interaction between members (citizens) of the community.

4.8.2. Progress toward objectives

During the first part of the reporting period the effort has been devoted to early integration and finalization of the Topological engine in order to be able to show it in the video demo. Immediately after that the full infrastructure for the Reputation system has been setup. This has meant the development of both the message passing streams and helper protocol (using vlnet library), and of the Nation back-office logic to handle both the persistency of the data and the anti-abuse and authorization logic.

The design of the integration between the VREngine Inventory and its persistence in the Nation has been finalized and the development of the needed protocols and services has started.

A major task has been the implementation of the Virtual Law Editor that allows the end user to define in an intuitive and graphical way the Permission Tables that are at the root of the behavior of the VREngine permission system. The module is able to translate the graphical interface output in the proper ".csv" tables needed by the VREngine Permission framework.

Design of the detailed flow of information needed for handling Contracts has also been started and is mostly complete. Its implementation is among the task that have been postponed to Q1 2010.

The proper definition of Groups/Roles has been agreed in order to implement it both at the Nation level and at the VREngine level.

4.8.3. List of previously unexpected difficulties

The Correction Plan activities have partly hindered the development of some Nation module, in favor of a more robust and usable framework. The activities on Nation have been voluntarily shifted forward.

4.8.4. Plans for next period and lessons learnt

The finalization of some Nation modules is foreseen for Q1 2010. Among those the more relevant one are e-voting (for democratic ruling of the Nation), a dispute resolution mechanism to make contracts and law violation more tangible to the end user.

4.9. WP9 – System integration and test

4.9.1. Work package objectives

This workpackage objectives are:

- the integration of the different parts developed during the project
- the test of the functionality of the integrated system

4.9.2. Progress toward objectives

Activities on this WP have only been started.

A roadmap toward an alpha-quality release has been agreed among partners for Q1 2010. The alpha-quality release will be the starting point for both an end-user validation of the platform, in terms of the e-learning scenario, as well as a starting point to collect in a more systematic fashion data on performance and functional behavior of the platform.

4.9.3. List of previously unexpected difficulties

This WP has been partly delayed due to some lacking functionalities in the Nation module and in the related underlying framework.

4.9.4. Plans for next period and lessons learnt

The issue of the test plan document will go together with the official release of the alpha platform.

4.10. WP10 – Evaluation and Recommendation

This Work Package shall start in M27, however, some first steps have been already done in December 2009, for what concerns the identification of potential users that could be involved in the activities related to this WP. More specifically, contacts have been established with some respondents involved in the focused analysis implemented in WP2.

4.11. WP11 - Dissemination and Exploitation

4.11.1. Work package objectives

Objectives of this work package are:

- dissemination of system specific information and work progress to be achieved using different information media,
- creation and execution of an Exploitation Plan.

4.11.2. Progress toward objective

Many dissemination and exploitation activities have been carried out during the reporting period.

T11.1) Dissemination

There have been several papers written in international journals, participation in international conferences, organization of a dedicated workshop. The full detailed list of these activities can be found in D1.2.7 and D1.2.8.

In order to better promote our platform a video demonstrating the features of VirtualLife and many leaflets have been prepared in the earlier part of the reporting period and have been widely used in subsequent events.

T11.2) Exploitation

The semester has been used in order to do some deeper research on business models and Ips; this research has been useful to define a proper and much more detailed exploitation strategy especially focused on possible business opportunities and scenarios for the platform.

4.11.3. List of previously unexpected difficulties

VU-FC: Participation in conferences with talks required to pay conference fees. The largest fee was for UCMedia 2009 conference with TrustVWSs workshop. Therefore other financial sources have been sought.

4.11.4. Plans for next period and lessons learnt

Partners are encouraged to submit to all possible events.

Accepted talks to conferences:

V. Čyras, K. Glass, F. Zuliani. Transforming legal rules into virtual world rules: a case study in the VirtualLife platform. The International Legal Informatics Symposium (IRIS 2010), Salzburg, Austria, 25-27 February 2010, <http://www.univie.ac.at/RI/IRIS2010/>. See program page 4 http://www.univie.ac.at/RI/IRIS2010/IRIS10_Progr_v18feb10.pdf

V. Čyras, F. Lachmayer. Technical rules and legal rules in online virtual worlds. BILETA 2010 conference (British and Irish Law, Education and Technology Association) <http://www.univie.ac.at/RI/BILETA2010/>. See page 5/6 of preliminary program http://www.univie.ac.at/RI/BILETA2010/BILETA10_Progr_2Feb10.pdf

Submitted to conference:

V. Čyras. A landscape of legal teleology: formalisation through visualization. Information Technologies 2010 (IT 2010), 16th International Conference on Information and Software Technologies, April 21st - 23rd 2010, Kaunas, Lithuania, <http://isd.ktu.lt/it2010/>

References

- [1] Corrective Plan, VirtualLife_1stReviewCorrectionPlan.pdf (delivered on March 24th 2009)
- [2] Corrective Actions Report, VirtualLife_1stReviewCorrectionPlanReport.pdf (delivered on November 24th 2009)