ITEA 2

INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

Project Profile

Global standards between real and virtual worlds

Enabling interoperability between first and Second Life

Metaverse1 will provide a standardised framework, together with associated interfaces, metadata definitions and similar elements, that enables interoperability between virtual worlds such as IMVU and Google Earth and the real world: sensors; actuators; vision and rendering; robotics – for revalidation for example; support for independent living; social and welfare systems; banking; insurance; travel; real estate; rights management; and many others. A special focus will be the 'Metaverse for all', aiming at the e-inclusion of minorities in society.

Virtual worlds – often referred to as 3D3C for 3D visualisation and navigation or the 3Cs of community, creation and commerce – integrate existing and emerging media technologies such as instant messaging, video, 3D, virtual reality (VR), artificial intelligence (AI), chat and voice that allow for the support of existing and the development of new kinds of social networks. Such virtual worlds have entered our lives, communication patterns, culture and entertainment never to leave again. It is not only teenagers that are active in Second Life and World of Warcraft (WoW), the average age of a gamer is now 35 and is increasing every year. And this does not even include role-playing in a professional context – also known as serious gaming – that is inevitable when learning practical skills.

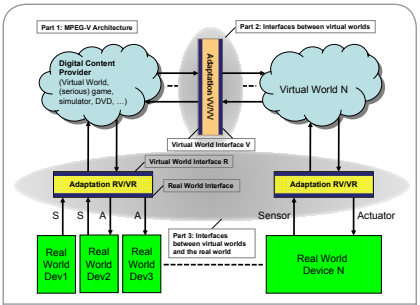
Virtual worlds are used for entertainment, education, training, getting information, social interaction, work, virtual tourism, reliving the past and forms of art. They augment and interact with our physical world and form an important part of people's lives. Many virtual worlds already exist as games, training systems, social networks and virtual cities and world models. Virtual worlds will change every aspect of our lives: the way we work, interact, play, travel and learn. Games will be everywhere and their societal need is very big; this will lead to many new products and requires many companies.

Would it not be great if the real world economy could be boosted by the exponential growing economy of the virtual worlds by connecting the virtual and real worlds? In 2007, the virtual economy in Second Life alone was around €400 million, a factor of nine growth over 2006. The connected devices and services in the real world can represent an economy of a multiple of this virtual world economy.

MAPPING THE CONNECTION

Metaverse1 is the first of a kind making connections between virtual worlds and between virtual worlds and the real world possible, accessible and usable.

Virtual worlds are on the brink of becoming valuable work tools. Major companies and public-sector organisations are investing heavily in virtual world technologies. But these are still early, pioneering days. Practically, it is necessary to be an expert to use most of these tools, setup can be arduous, navigating in a 3D environment takes practice, and processing and bandwidth requirements remain high. But, within five years, the 3D Internet will be as important for work as the Web is today. Information- and knowledge-management



Metaverse1 architecture

Metaverse1

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Partners

Alcatel-Lucent Bell N.V.
Arvato Systems
Avantalia
Carsa
CBT
Centre Henri Tudor
C-LAB / University of Paderborn
DevLab
Ellinogermaniki Agogi
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Fraunhofer IGD Rostock
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Technical University of Eindhoven
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Telefonica I&D
University of Rostock
University of Twente
UPF-MTG
UsableWeb
Utrecht University
VicomTECH
VU CAMeRA
VU Economics & BA

Countries involved

Belgium
France
Germany
Greece
Israel
Luxembourg
The Netherlands
Spain

Project start

September 2008

Project end

March 2011

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Project Profile

professionals are investigating and experimenting with virtual worlds: using virtual worlds to try to replicate the experience of working physically alongside others; allowing people to work with and share digital 3D models of physical or theoretical objects; and making remote training and counselling more realistic by incorporating non-verbal communication into same-time, different-place interactions. However, interoperability between and with virtual worlds is a key requirement and the aim of the Metaverse1 project.

AIMING AT STANDARDISATION

The project is focused on the transition of services, both personal in the form of social contacts, recreation and the like, and professional – such as government, healthcare and similar areas – from the physical world to the virtual world and hybrid versions. This transition has a big impact on the users of these services as well as on the operation and interfacing of the devices used in this context – and the associated embedded software and hardware in these devices.

Validated project results will be proposed for international standardisation in the context of the ISO/IEC MPEG-V interoperability standard – Information exchange with Virtual Worlds – that has been initiated by the project consortium.

NEW, SUSTAINABLE INDUSTRY

The Metaverse is a virtual 3D world where people can work, interact, play, travel, learn and augment their real lives. The broad acceptance of virtual words such as social networks and serious games, and the relation to the real world – devices and real world networks – brings opportunities and challenges. In this context, the project addresses the associated business models that need to be developed. The resulting interoperability will enable a new and sustainable industry.

It is foreseen that the Metaverse will be the start of the next revolution of the Internet and related technologies, becoming a major source of information, services, education and entertainment in the digital society. In this context, it is also important to ensure that minorities in society with limited social, economic, physical and/or technical abilities will not be excluded from this technology revolution as it will replace a substantial number of existing infrastructures and services.

HIGH GROWTH POTENTIAL

From an economic point of view, the emerging virtual market has a high growth potential. It will certainly replace a part of existing markets – this is already happening on the basis of current Internet technology – but will also certainly create new market opportunities. In fact, the first isolated examples of these markets already exist – such as all on-line strategy games, advanced social networks and all travel, insurance and real estate e-business.

It is very important in this context that agreements, interfaces and standards are developed to guide the economy, privacy, security, fairness, inclusion, ethics and similar in and between virtual worlds and the real world. International standardisation – the ISO/IEC MPEG-V standard on Information exchange with Virtual Worlds – driven by a strong European consortium can have a big influence on these developments and result in strong European influence and control. The design and developments required for this new economy will also be responsible for a large number of high quality jobs.

Metaverse1 head office in Second Life

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- ITEA 2 – Information Technology for European Advancement – is Europe's premier co-operative R&D programme driving pre-competitive research on embedded and distributed software-intensive systems and services. As a EUREKA strategic Cluster, we support co-ordinated national funding submissions and provide the link between those who provide finance, technology and software engineering. Our aim is to mobilise a total of 20,000 person-years over the full eight-year period of our programme from 2006 to 2013.

- ITEA 2-labelled projects are industry-driven initiatives building vital middleware and preparing standards to lay the foundations for the next generation of products, systems, appliances and services. Our programme results in real product innovation that boosts European competitiveness in a wide range of industries. Specifically, we play a key role in crucial application domains where software dominates, such as aerospace, automotive, consumer electronics, healthcare/medical systems and telecommunications.

- ITEA 2 projects involve complementary R&D from at least two companies in two countries. We issue annual Calls for Projects, evaluate projects and help bring research partners together. Our projects are open to partners from large industrial companies and small and medium-sized enterprises (SMEs) as well as public research institutes and universities.

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