OMWeb

Open Media Web

Deliverable N° D4.3

Final Report, M26

(PROJECT FINAL REPORT)

Version: 13 February 2012

1. Final publishable summary report

1.1. Executive Summary

Open Media Web: Integrating Media and the Web

The popularity of Internet-based access to networked media such as television content, user-generated videos or music is growing very rapidly.

With technologies such as HTML5 video, Web technology is currently undergoing a sea-change which makes it a strong contender for becoming an open, royalty-free standards-based platform for networked media that levels the playing field and enables new market participants, including European players. The key goals of the OMWeb project were to increase the networked media capabilities of Web standards to the level of proprietary technologies through **standardisation**, to increase the number of developers capable of developing web-based networked media content through **training** and to increase the awareness of W3C's networked media work in Europe through **outreach**.

To achieve its standardisation goal, the OMWeb project helped establish the **W3C Points of Interest Working Group** and a first Working Draft of a "Points of Interest Core" specification was published. Moreover, the OMWeb project helped establish the **W3C Web and TV Interest Group**, who published a document on requirements for home networking scenarios (including second screen) as well as a set of TV requirement for HTML5 (including multi-track support, support for adaptive streaming and content protection). Finally, the OMWeb project supported the creation of the **W3C Web Real-Time Communications Working Group**, addressing real time audio/video conferencing in Web browsers as well as peer-to-peer streaming. The OMWeb project also organized a very successful workshop on "HTML.next for Games" which resulted in the creation of the **W3C Games community group**. To facilitate contribution by ICT projects to W3C standardization, the OMWeb published a **standardization roadmap** describing ongoing standardisation at W3C in the area of networked media.

To achieve its training goal, the OMWeb project organized **three online training courses**

- Introduction to SVG

- HTML5 Audio and Video

- Game Development in HTML5).

These courses were attended by 280 students.

To achieve its outreach goal, the OMWeb project gave 11 presentations on W3C's networked media activities at high-profile events, issued four press releases on W3C networked media activities and collected close to **350 press articles** including from general interest press (El Mundo, The Guardian, France Info, Le Figaro, Les Echos, ZeitOnline) on W3C's networked media activities.

1.2. Project Context and Objectives

1.2.1. Project Context

Internet-Based Networked Media: Current Issues

The popularity of Internet-based access to networked media such as television content, user-generated videos or music is growing very rapidly. However, the most popular solutions are based on proprietary, closed systems and technologies such as YouTube, Adobe Flash or Apple iTunes. European technology providers only have a relatively minor role in this area while European content providers often have a weak negotiation position when they wish to provide their content on today's dominant Web-based networked media platforms such as iTunes. A previous, Europe-driven effort for opening up the playing field through standardization - MHP (Multimedia Home Platform) - has not achieved the success in the market place that was hoped for, partly due to patent holders unexpectedly requesting licensing fees from content providers.

Web-Based Networked Media: The Promise

Web technology is currently undergoing a sea-change which makes it a strong contender for becoming an open, royalty-free standards-based platform for networked media that levels the playing field and enables new market participants, including European players. Examples of ongoing Web standards developments of importance to networked media include

- the emergence of audio and video support within the upcoming W3C HTML5 standard as well as powerful graphic capabilities such as the canvas functionality or CSS-based animation and transition effects

- the emergence of standards-based Web applications including W3C APIs for device access

- standardized browser-based geolocation services

- W3C work started on media annotations, focusing on a generalized, unified ontology and API with the goal of facilitating search for multimedia objects.

Figure 1.1 shows what can be achieved with these emerging W3C standards. While clearly targeted towards a technical audience rather aiming for "slickness", this demonstration nevertheless shows that Web standards are quickly approaching the capabilities of proprietary technologies that are used today for web-based network media applications.

A glimpse of future Web technologies

This demonstration works in Firefox 3.1 beta 3 (well, at least linux). A bit more work could be done to make it work with webkit. To see the east asian Ruby annotations, you'll need the XHTML Ruby support extensions.

Figure 1.1: Demonstration of HTML5, CSS effects, video, subtitling and other emerging W3C standards (no proprietary technologies used). Source: http://intertwingly.net/blog/2009/03/22/Several-Web-technologies)

Given that W3C standards are developed with the goal of being royalty-free, the issues with license payments by content providers that are hampering MHP adoption are unlikely to be repeated in web-based networked media services.

Open Media Web Project: Motivation

Networked media is rapidly moving towards the Web as the main access and delivery platform. Today, European research and industry – while historically strong in the area of networked media – currently does not play a role that is matching its potential in the field of Web-based networked media.

The Open Media Web SA aims to remedy this situation by **outreach** to the European media research and industry community on W3C's activities that are relevant to networked media (including HTML5, Web applications/Widgets, Geolocation and Media annotation). This includes press releases and the production of outreach material.

Moreover, the OMWeb project includes some specific activities that are targeted towards particular communities

- **Content providers and developers**: OMWeb includes **training activities** to enable European content providers and developers to quickly get up to speed on newly developed Web standards in the area of networked media, and to develop services offerings based on these standards. Experience with previous training events at W3C suggests that there is a high demand by the community for such courses. Previous courses often filled up within one or two business days, which shows that W3C's reputation also extends in the area of training, given that many of its team members are experts in their respective standardization area.

- **Technology providers and researchers**: OMWeb includes **standardization** workshops on upcoming topics for potential standardization where technology providers and researchers can bring their technologies to the table. There will be a particular focus on ICT projects by striving to co-organize these standardization workshops with appropriate projects in order to increase their involvement in the standardization area. A list of recent standardization workshops organized by the W3C in other areas can be found at http://www.w3.org/2003/08/Workshops/ (including workshop reports, list of workshop attendees, position papers and presentation slides).

Open Media Web Project: Benefits

Sector actors are motivated to work towards the goal of the OMWeb project, since it will lead to a "win-win" situation for everyone involved. Business benefits vary by industry sector:

o **European content providers** will see the cost of content development reduced significantly by Web software that is compatible with Web standards rather than having to support multiple proprietary technologies.

o **European consumer electronics providers** will benefit from the integration of Web concepts which are familiar to millions of European Web users into networked media and consumer-electronics devices, thereby moving the focus from traditional PC-based Web devices (with little to no European presence) to consumer electronics devices.

o **European advertising agencies** will have the opportunity to develop new concepts and business models for the new opportunities created by Web-based network media access such as higher interactivity and the potential for simplified identification of target groups.

o **Software infrastructure providers** will see increased sales of the software needed for supporting web-based network media access.

o **Telecommunications operators** will see increased take up of data services through increased networked media Web use, resulting in an increased ARPU (Average Revenue Per User).

o **Mobile handset manufacturers** will see increased sales of modern handset that facilitate access to Web-based networked media services.

o **Hardware infrastructure providers** will see increased sales of the hardware needed for web-based networked media access.

The OMWeb project will support working groups that enable collaboration between the Web-based and the more traditional networked media communities. Moreover, a series of workshops will provide the opportunity for members of all relevant communities involved to collaborate on ideas and concepts around web-based networked media.

1.2.2. Project Objectives

OMWeb has the following objectives:

Objective 1: Increase Awareness of W3C's Networked Media Work in Europe

Goal: European actors in the networked media value chain (content providers, authoring tool providers, media technology providers, content distributors etc.) need to be informed about the goals and results of W3C's networked media work.

Objective 2: Increase Number of Developers Capable of Developing Networked Media Web Content

Goal: European content providers need to be capable of creating networked media content that is Web-based rather than based on traditional networked media technologies.

Objective 3: Increase European Standards Activities in Web-based Networked Media

Goal: European actors (both technology and content providers) currently do not play the role in the rapidly growing field of Web-based networked media that they are playing in traditional media. Royalty-free, web-based networked media standards will help to "level the playing field".

1.3. Scientific & Technological Results

1.3.1. Standardisation

Web and TV: Standardization Launched

The **W3C Web and TV Interest Group**, created in February 2011 with support of the OMWeb project, published **Requirements for Home Networking Scenarios** document (available at http://www.w3.org/TR/hnreq/). Scenarios discussed in this document include

- second-screen scenarios whereby a tablet device or a mobile phone gets used as a companion device that controls and/or under the control of the TV set,

- scenarios where a Web application exposes a service to the home network or interacts in a generic way with services exposed on the home network.

Based on this document, discussions have moved to the standardization level. As of November 2011, the Device APIs Working Group has started to work on a Device Discovery API, using the requirements document as input.

The Web and TV IG also discussed TV requirement towards HTML5, and submitted a number of **change requests[1] to** the **HTML5** working group, including multi-track support, support for adaptive streaming and content protection.

Augmented Reality: "Points of Interest" Standardization Group Established

Mass-market Augmented Reality (AR) applications have been brought to the fore in recent years with the advent of smart phones. These mobile computers combine live images (from the camera) with data drawn from the internet, positional data, image recognition software, and more, to annotate the scene in front of the user (see Figure 1.2).

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[1] http://www.w3.org/2011/webtv/wiki/MPTF/MPTF_Requirements

The OMWeb project organized a W3C workshop on Augmented Reality on the Web to provide a single forum for researchers and technologists to discuss the intersection of AR and Web technologies, particularly as used on the mobile platform, and to explore what role standardization should play for Open Augmented Reality.

As a result, the **W3C Points of Interest Working Group was created in October 2010** to work on points of interest standards and a **first Working Draft of a "Points of Interest Core" specification was published in May 2011**.

Figure 1.2: Screenshot of the Wikitude Augmented Reality browser (from their website). In the application, the user clicks an icon to find out more about the labelled location.

Standards for Web Real-Time Audio/Video Conferencing

The W3C Web Real-Time Communications Working Group was launched in May 2011 with the support of the OMWeb project to work on client-side APIs to enable **real time audio/video conferencing in Web browsers**.

While the main use case for real-time communications is of course audio/video calls between peers, the work covers **peer-to-peer streaming** of audio, video as well as datagrams.

The group published a First Public Working Draft of the API end of October 2011[2].

Organized Workshop on HTML.next for Games

To meet and engage in discussions with developers of the games community as early as possible, OMWeb organized a workshop on HTML.next for Games.

28 people attended the workshop, representing 14 companies, including Google, Mozilla, Tecnalia, and Wooga. More than 2/3 of them were from European companies, small and medium-sized enterprises for the most part. Participants were passionate about games and Web technologies. During the workshop, more than 20 features that would enable the development of better games using regular Web technologies were reviewed, refined and classified:

- ⚲ 12 new features were identified, such as the need for a **Joystick API**, a **mouse lock**

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[2] http://www.w3.org/TR/webrtc/

mechanism, an **orientation lock** mechanism, or **high performance timers**

⚔ Standardization has already started for 5 features such as **accurate sound triggering** or **real-time peer-to-peer communications**.

⚔ Other features mentioned require more discussion, or were seen as out of scope for standardization in W3C.

The workshop **led to the creation of the Games Community Group** within W3C, dedicated to tracking the implementation of Open Web Platform features directly relevant for games development within Web browsers, and communicating how to build games on the Open Web Platform to the general public.

Standardization Roadmap Published

A standardization roadmap has been created and [published](#) with the goal of facilitating contributions by ICT projects to W3C standardization. The roadmap starts out by explaining the various ways in which an ICT project can contribute to W3C.

The roadmap goes on to map ongoing W3C standardization activities onto target outcomes outlined in the ICT funding program for "Networked Media", namely

* Technologies for converged delivery of multimedia content and services
* Networked Search

Using this roadmap, an ICT project interested in contributing to standardization for a new generation of web-based applications can easily determine which W3C standardization activities are relevant to the project's target outcome and contribute to those or even potentially suggest new standardization activities should there be important omissions in W3C's current standardization work.

For each W3C standardization activity relevant to one of the target outcomes, the roadmap identifies its most important characteristics, including

* the relevant W3C specification or section of a specification, including a direct link, enabling an interested ICT project to directly find the relevant information
* the relevant W3C WG with a direct link, enabling an ICT project to find out more about who participates in the effort, ongoing WG discussions and other related standardization work items handled by the WG.

1.3.2. Training

Introduction

OMWeb has organized three online training courses related to HTML5:

o Introduction to SVG

o HTML5 Audio and Video

o Game Development in HTML5

More information about the training courses is available at the following address:

http://www.w3devcampus.com/

Introduction to SVG

Course Content

Scalable vector Graphics, SVG, allows interactive and dynamic graphical content to be displayed on the Web, whether accessed through a desktop or mobile device. This content is drawn using *vectors*, meaning that images can be scaled without introducing the graininess associated with zooming in or out on bitmapped graphics and that these vector-based encodings are generally small and efficient.

Closely linked with HTML5, W3C's SVG (Scalable Vector Graphics) standard is quickly becoming a key, non-proprietary technology that every Web developer needs to master in the future, especially when creating "rich", interactive sites. Today, *all* major browsers include native support for this exciting technology.

The course material is available as six weekly sessions as in described below. The full course material (lectures and assignments) is available online[3] and in Appendix 1.

Week 1: Let's get on with it

After an overview of SVG subject and a brief look at its history, we quickly get into creating and positioning simple shapes, getting to know the tags and attributes and look at lots of examples. By the end of week 1, you'll be able familiar with <circle>, <ellipse>, <line>, <rect>, <text>, and <image>.

Week 1 assignment: the assignment at the end of the week asks you to create a document that reproduces a given set of visual elements, using SVG.

Week 2: The path to power

Week 2 introduces the <path> element: an extremely powerful and flexible aspect of SVG. It's so powerful and flexible that it gets a whole week to itself!

Week 2 assignment: the assignment this week will ask you to reproduce a set of SVG images.

Week 3: Special effects department

This week we begin to get more creative with border effects; transformations: translation, rotation, and scaling; linear and radial gradients. With all the key elements in place we can start to reduce the amount of code necessary by grouping elements and applying the <use> element.

Week 3 assignment: for cementing what you've learned so far, please reproduce again a new set of SVG images.

Week 4: Light and heavy lifting

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[3] SVG online training course on w3techcourses.com: http://kwz.me/uX

Now that we've learned how to create graphics and add special effects, it's time to tackle some methods for affecting the way in which images are presented. Clip-paths, patterns and filters can be used to create (shaped) picture frames, repeating patterns, different coloration and so on.

By the end of week 4 you'll have covered a lot of ground. You'll be able to make professional-looking graphics with a variety of eye-catching effects and that may be as far as you want to go. If so, you can stop here and, if you've successfully completed all the assignments, claim your certificate. Alternatively you can choose to dive into the final two weeks for which familiarity with scripting and core programming concepts will be required.

Week 4 assignments: Students have a choice of which assignments to work on depending on their willingness to continue the course and learn more about advanced SVG. Among four proposed assignments, participants are notably invited to implement all their new knowledge to create rich creative graphics.

Week 5: Dynamism: scripted SVG

This week begins by looking at declarative animation. That is, animation defined in the XML markup, not in scripting. You can bend and twist shapes, move one image along the outline of another and so on - all defined by markup. We'll then look at script-based approaches to dynamism, adding new content to images and basic user interaction.

Week 5 assignment: the course ends with an assignment designed to allow you to put into practice the skills obtained throughout the course.

Week 6: DOM, DOM and DOM

In the final week we examine SVG's Document Object Model and pick up some more techniques for driving user interaction through scripting. The very last lectures lead the way towards you writing scripts that allow you to affect your SMIL animations through scripting and that bridge the gap between the HTML and SVG DOMs.

Student work

All teachers like to show off their students' best work. Figures 1.3 and 1.4 demonstrate the level of complex and rich SVG work that students were able to achieve in their final assignment, using what they had learned in the course.
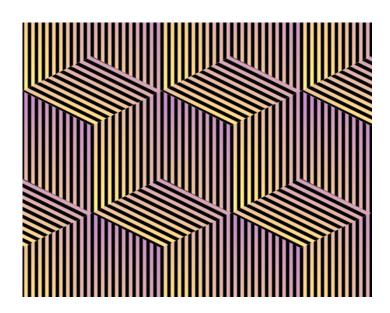
Figure 1.3: Complex picture created by Katy Dmitriev

Figure 1.4: Optical Art cubes with gradients, by Phil Brammer (http://kwz.me/YU)

HTML5 Audio and Video

Course Content

Using HTML5, CSS and JavaScript, students learn as they progressively build increasingly comprehensive media players and solutions. By learning about the underlying technology, the aim is that the student will understand the full potential of the media, the tools and the tricks of the trade. Armed with this sound knowledge of

HTML5 audio and video and its potential, students will be able to confidently create cross-browser HTML5 based audio/video solutions.

Each week ends with a practical assignment. An outline of the course material is provided below.

Week 1: Introduction to HTML5 Media

We look at the back-story of media on the Web and where we are and then launch into creating our very own media player using HTML5. We'll start with the basics and take you the various capabilities of the <audio> and <video> tags and the API, while keeping a firm grasp of the pragmatic issues that a developer will need to tackle to create cross browser solutions.

Week 1 assignment: "Creating your first basic audio and video player"

Week 2: Tools of the trade

HTML5 media must be correctly encoded to ensure maximum compatibility throughout the various target platforms. We explore the various tools and services available to encode and host our media and then delve deeper into the extensive HTML5 media API to take our player to the next level.

Week 2 assignment: "Encode your own media"

Week 3: Media player controls

We take a look at the various controls and feedback that we need to create to provide a comprehensive media player and explore the mechanisms that lie behind them.
Week 3 assignment: "Add a functional progress bar to your audio and video players"

Week 4: Playlists

One of the most desired functions for audio and sometimes video players is the ability to have playlists. Playlists allow you to order a number of pieces of media for sequential playback.
Week 4 assignment: "Add a playlist to your audio player and add subtitles to your video player"

Week 5: Integrating Video with other HTML5 Elements

One of the great advantages of HTML5 media is that it can interact with other HTML elements.

Week 5 assignment: "Integrate canvas or WebGL with video, and create audio spot effects"

Student Work

Here are some of the best student achievements. Figures 1.5 and 1.6 show students have successfully implemented audio progress bars, a playlist application and audio sprites. All of these examples are also available online, and the URL is given in the Figure caption.

Figure 1.5: Progress bars by Sascha Hübner (http://kwz.me/YQ)
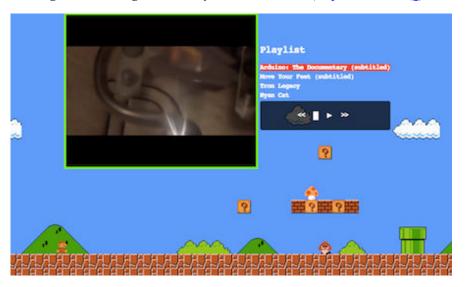

Figure 1.6: Playlist by Carlos Solis (http://kwz.me/YR)

Students embedded audio and video in the Web page of their choice (such as a "game" shown in Figure 1.6). Progress bars show "progress" of what has been buffered, preloaded or make the content "seekable". Finally, a playlist helps to select the audio file that plays along the video clip.

Video/Canvas

Audio sprites

sprite 1 sprite 2 sprite 3

Figure 1.7: Video/Canvas and Audio Sprites, by Sandra Vilaro (http://kwz.me/YZ)

Audio sprites (used in Figure 1.7) are combined audio files on which an audio API is used to play only selected parts of the audio track. The students implemented a capability for "listening" and stopping when one audio should be halted, then seeking through the file and playing another part of it.

Game Development in HTML5

Course content

The pre-requisites are basic knowledge of HTML, JavaScript & CSS.

During the course, participants learn how to use Open Web Technologies such as JavaScript, CSS3 & HTML5 to create browser based multiplayer games. Different methods of real-time animation, implementing a game loop, the structure of the code or communication between the players are discussed and compared. The logic of the games is based on an engine that was written for the occasion. This game engine is able to animate sprites, detect collisions, and add basic physics to the game characters and much more. Finally, participants learn how to run their game as a desktop application outside the browser on MacOSX, Linux & Windows, or as a native application on your mobile device.

Each week ended with a practical assignment. An outline of the course material is provided below.

Week 1: Introduction to HTML5/JavaScript game development

We will give a quick refresher of the basics of JavaScript & HTML5, learn how to manipulate the Document Object Model and how to draw using the canvas element. We will discuss different methods of implementing a game loop and user controls. An history of JavaScript games will also be presented.

Week 1 assignment: "Create single object on a scene and control it using mouse or/and keyboard."

Week 2: Let's make it move!

We will discuss different methods of sprite animation using HTML5 and recall information about basics of physics from high school. We will also learn how to detect collisions between objects.

Week 2 assignment: "Create animated character that could jump on the platforms on the scene."

Week 3: Connecting with other players

We will present methods for connecting players. Then, we will check if it is possible to connect two browsers without worrying about server side scripts. We will also learn how to implement multiplayer gameplay in our games.

Week 3 assignment: "Add multiplayer support to your game."

Week 4: Deploying your game

Last but not least – we will explore the power of JavaScript, CSS3 & HTML5 outside the desktop browser. We will add native features of your mobile phone like accelerometer or vibrations and and how to "package" your game so you can publish it in app stores.
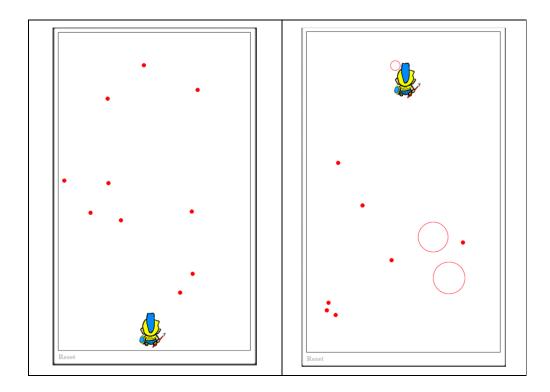
Week 4 assignment: "Create a package with your game for mobile devices using described frameworks or publish it as a desktop application for different operating systems."

Students Work

Students were able to achieve quite impressive results at the end of the HTML5 Games course.

In this Section, we provide examples of the final assignments that were mostly targeting mobile devices. To quickly get an impression of student work, a somewhat more rudimentary desktop PC game from an earlier week is available at http://isistv.ro/58bOEdHG/A4/

Students either used the example given in the course (Figure 1.8) or imagined and created their own games (Figures 1.9 to 1.10). All examples are available online, and the URL is given in the figure caption.

Figure 1.8: HTML5 game by Per Quested Aronsson (http://kwz.me/BS)

The game in Figure 1.8 shows a game that runs on mobile phones. To play, hit a red dot to make it pop, and move the player by either tilting the phone or taping on the screen".

Figure 1.9: A multi platform game, by Israel Pastrana (zip file at http://kwz.me/BK)

Figures 1.9 and 1.10 show HTML5 games that can be uploaded onto the Apple App store and run on iphones. The student implemented a multi-player game. Every player is allowed to control his or her own object. The game characters are able to jump and to walk left or right. The student also implemented simple collision detection mechanism among either objects or "players".
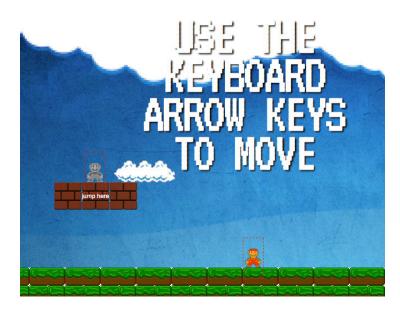

Figure 1.10: Multiplayer Mario, by Ho Sun Howard Kwong (zip file at http://kwz.me/B4)

Figure 1.11 shows a recreation of the well-known "Pacman" game, again uploadable on the Apple AppStore.
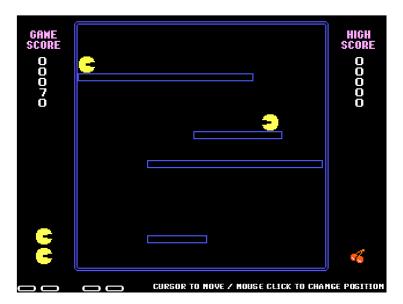
Figure 1.11: Multiplayer Packman, Wolfgang Litzlbauer (zip file at http://kwz.me/B0)

1.4. Impact, Dissemination and Exploitation

1.4.1. Potential Impact

The Open Media Web project aims to build on Europe's strength in multimedia technology and content to enable European research and industry to strengthen its position in Web technology.

However, realizing this promise requires bridging a "convergence gap" between the innovative and rapidly expanding Web community and the traditional actors in the networked media and 3D community. This gap is particularly apparent in Europe, which is strong in traditional media fields, but has yet to realize its full potential in the area of Web-based networked media.

OMWeb is expected to overcome the "convergence gap" in Europe. This is achieved by outreach on Web standards that are of particular relevance to the networked media community. Moreover, a series of workshops have provided the opportunity for members of all relevant communities involved to collaborate on ideas and concepts around web-based networked media. The Open Media Web project also included training events that enabled the European networked media community to become familiar with standards relevant to web-based networked media. The project will also supported working groups that enable collaboration between the Web-based and the more traditional networked media communities.

Regarding its *socio-economic impact and the wider societal implications*, the Open Media Web project aims to build on Europe's strength in multimedia technology and content to enable European research and industry to strengthen its position in Web technology. This will contribute to the preservation of existing and the creation of future employment and business opportunities in the networked media area in Europe in areas such as augmented reality, Web and TV, web-based gaming and other high-growth networked media sectors.

1.4.2. Dissemination Activities

The goal of the outreach work within OMWeb was to disseminate the results of W3C's networked media work to a European audience.

The following results have been achieved:

- Collected **close to 350 press articles** including from **general interest press (El Mundo, The Guardian, France Info, Le Figaro, Les Echos, ZeitOnline)** on W3C's networked media activities, resulting from outreach to media, through the release of four press releases and organization of a very well attended press conference

- OMWeb-funded W3C team members gave **11 presentations** on W3C's networked media activities at high-profile events, increasing the visibility of W3C's mobile work in Europe, and leading to valuable contacts for future collaboration

- Production of **successful outreach material** (see Figure 1.12)

- Successful **collaboration with six ICT projects**, including **publication of a peer-reviewed paper** "Towards video on the Web with HTML5" jointly written with Saracen project that was accepted and presented at 2010 NEM summit

Figure 1.12: Examples of OMWeb Outreach material – Project flyer and Web technology stickers

1.4.3. Exploitation of Results

Training Courses

OMWeb has developed material for three online training courses related to HTML5:

- o Introduction to SVG
- o HTML5 Audio and Video
- o Game Development in HTML5

We plan to exploit this training material for future course offerings.

More information about the training courses is available at the following address:

http://www.w3devcampus.com/

1.5. Appendix: List of Beneficiaries, Project Website, Contact Details

List of Beneficiaries

GEIE ERCIM
2004 r d Lucioles
06410 Biot
France

Project Website

http://openmediaweb.eu/

Contact Details

Dr. Philipp Hoschka
ERCIM/W3C
2004, route des Lucioles
06902 Sophia-Antipolis
E-mail: ph@w3.org

2. Use and dissemination of foreground

Section A (public)

This section includes two templates

- Template A1: List of all scientific (peer reviewed) publications relating to the foreground of the project.

- Template A2: List of all dissemination activities (publications, conferences, workshops, web sites/applications, press releases, flyers, articles published in the popular press, videos, media briefings, presentations, exhibitions, thesis, interviews, films, TV clips, posters).

TEMPLATE A1: LIST OF SCIENTIFIC (PEER REVIEWED) PUBLICATIONS, STARTING WITH THE MOST IMPORTANT ONES										
NO.	Title	Main author	Title of the periodical or the series	Number, date or frequency	Publisher	Place of publication	Year of publication	Relevant pages	Permanent identifiers[4] (if available)	Is/Will open access[5] provided to this publication?
1	*Towards Video on the Web with HTML5*	*Francois Daoust*	*Proceedings NEM 2010*	*NEM 2010*	*Eurescom*	*Barcelona*	*2010*	*n/a*	*http://www.w3.org/2010/Talks/1014-html5-video-fd/video-html5.pdf*	*yes*
2	*Adopting HTML5 for Television: Next Steps*	*Francois Daoust*	*Proceedings NEM 2011*	*NEM 2011*	*Eurescom*	*Torino*	*2011*	*n/a*	*http://www.w3.org/2011/07/w3c-webtv-nem.pdf*	*yes*

[4] A permanent identifier should be a persistent link to the published version full text if open access or abstract if article is pay per view) or to the final manuscript accepted for publication (link to article in repository).

[5] Open Access is defined as free of charge access for anyone via Internet. Please answer "yes" if the open access to the publication is already established and also if the embargo period for open access is not yet over but you intend to establish open access afterwards.

								Countries addressed
NO.	Type of activities[6]	Main leader	Title	Date	Place	Type of audience[7]	Size of audience	
1	Web	ERCIM	OMWeb project Web site	Jan. 2010		All		Europe and International
2	Presentations	ERCIM	Mobile Augmented Reality Summit (co-located with Mobile World Congress 2010)	17 Feb. 2010	Barcelona, Spain	Scientific Community, Industry, Medias	80	Spain and Europe
3	Flyers	ERCIM	Flyer for the Augmented Reality workshop	20 Feb. 2010		Scientific Community, Industry, Medias	1000	International
4	Media Briefings	ERCIM	HTML5 Paris press briefing	7 April 2010	Paris, France	Medias	12	France
5	Presentations	ERCIM	HTML5 Meetup	7 April 2010	Paris, France	Medias, Industry	150	France
6	Press Release	ERCIM	W3C to Lead Discussions on HTML5, Linked Open Data at WWW2010	20 April 2010	International	Medias		International
7	Workshops	ERCIM	World Wide Web Conference 2010	30 April 2010	Raleigh, USA	Scientific Community, Medias, Industry	100	International

The table above is titled **TEMPLATE A2: LIST OF DISSEMINATION ACTIVITIES**

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[6] A drop down list allows choosing the dissemination activity: publications, conferences, workshops, web, press releases, flyers, articles published in the popular press, videos, media briefings, presentations, exhibitions, thesis, interviews, films, TV clips, posters, Other.

[7] A drop down list allows choosing the type of public: Scientific Community (higher education, Research), Industry, Civil Society, Policy makers, Medias ('multiple choices' is possible.

8	Presentations	ERCIM	Mobile2.0 Europe Developer Conference	17 June 2010	Barcelona, Spain	Industry, Medias, Scientific Community	30	Spain and Europe
9	Flyer	ERCIM	OMWeb project	June 2010		Scientific Community, Industry, Medias		Europe and International
10	Presentations	ERCIM	EBU Webinar	5 July 2010	Virtual	Industry	20	Italy, Portugal, Switzerland, France, UK, Germany, Belgium, etc.
11	Presentations	ERCIM	IBC2010	13 Sept. 2010	Amsterdam, Netherlands	Industry, Medias	50	International
12	Presentations	ERCIM	NEM Summit 2010	14 Oct. 2010	Barcelona, Spain	Industry, Policy Makers, Scientific Community, Medias	70	Spain and Europe
13	Presentations	ERCIM	W3C Technical Plenary	2 Nov. 2010	Lyon, France	Industry, Scientific Community, Medias	350	International
14	Presentation	ERCIM	Imaginove Project Booster	1 Feb. 2011	Lyon, France	Industry	60	France
15	Press Release	ERCIM	W3C Confirms May 2011 for HTML5 Last Call, Targets 2014 for HTML5 Standard	14 Feb. 2011	International	Medias		International
16	Press Release	ERCIM	W3C Issues Report on Web and Television Convergence	28 March 2011	International	Medias		International
17	Exhibitions	ERCIM	FET 2011	4-6 May 2011	Budapest, Hungary	Scientific Community, Medias, Industry, Policy Makers	1000	Hungary and Europe
18	Press Release	ERCIM	Open Web Platform Progress Drives Expanding Industry Interest	10 May 2011	International	Medias		International
19	Presentations	ERCIM	Bilbao Web Summit	18 May 2011	Bilbao, Spain	Industry, Medias, Civil Society	450	Spain and International

20	Press Release	ERCIM	W3C Invites Broad Review of HTML5	25 May 2011	International	Medias		International
21	Media Briefings	ERCIM	SVG press meeting	2 Sept. 2011	Paris, France	Medias	2	France
22	Presentations	ERCIM	SVG Meetup	6 Sept. 2011	Paris, France	Developers, Industry, Medias	60	France
23	Presentations	ERCIM	NEM Summit 2011	28 Sept. 2011	Torino, Italy	Industry, Policy Makers, Scientific Community, Medias	80	Italy and Europe
24	Exhibitions	ERCIM	NEM Summit 2011	28 Sept. 2011	Torino, Italy	Industry, Policy Makers, Scientific Community, Medias	300	Italy and Europe
25	Presentations	ERCIM	2nd FOKUS Media Web Symposium 2011	10 Nov. 2011	Berlin, Germany	Industry, Policy Makers, Scientific Community, Medias	70	Germany and Europe
26	Presentations	ERCIM	Rencontres INRIA-Industries	17 Nov. 2011	Rennes, France	Industry, Scientific Community, Medias	200	France
27	Exhibition	ERCIM	Rencontres INRIA-Industries	17 Nov. 2011	Rennes, France	Industry, Scientific Community, Medias	250	France

Section B (Confidential[8] or public: confidential information to be marked clearly)

Part B1

TEMPLATE B1: LIST OF APPLICATIONS FOR PATENTS, TRADEMARKS, REGISTERED DESIGNS, ETC.					
Type of IP Rights[9]:	Confidential Click on YES/NO	Foreseen embargo date dd/mm/yyyy	Application reference(s) (e.g. EP123456)	Subject or title of application	Applicant (s) (as on the application)
n/a	n/a	n/a	n/a	n/a	n/a

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[8] Note to be confused with the "EU CONFIDENTIAL" classification for some security research projects.

[9] A drop down list allows choosing the type of IP rights: Patents, Trademarks, Registered designs, Utility models, Others.

Part B2

Type of Exploitable Foreground[10]	Description of exploitable foreground	Confidential Click on YES/NO	Foreseen embargo date dd/mm/yyyy	Exploitable product(s) or measure(s)	Sector(s) of application[11]	Timetable, commercial or any other use	Patents or other IPR exploitation (licences)	Owner & Other Beneficiary(s) involved
General advancement of knowledge	SVG Training Course	No		Training Course	J62 - Computer programming, consultancy and related activities	2012-13	N/A	ERCIM
General advancement of knowledge	HTML5 Audio/Video Training course	No		Training Course	J62 - Computer programming, consultancy and related activities	2012-13	N/A	ERCIM
General advancement of knowledge	HTML5 and Games Training Course	No		Training Course	J62 - Computer programming, consultancy and related activities	2012-13	N/A	ERCIM

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[19] A drop down list allows choosing the type of foreground: General advancement of knowledge, Commercial exploitation of R&D results, Exploitation of R&D results via standards, exploitation of results through EU policies, exploitation of results through (social) innovation.

[11] A drop down list allows choosing the type sector (NACE nomenclature) : http://ec.europa.eu/competition/mergers/cases/index/nace_all.html

2.1. SVG Training Course

- **Purpose**: Training of Web developers on SVG

- **How the foreground might be exploited, when, by whom and where**: Pay-for online training course offered by W3C in years 20012-13

- **IPR exploitable measures taken or intended**: Course protected by copyright

- **Further research necessary, if any**: further development and updates to course material

- **Potential/expected impact (quantify where possible)**: training revenues for W3C, Web developers educated in SVG

2.2. HTML5 Audio/Video Training Course

- **Purpose**: Training of Web developers on HTML5 Audio/Video

- **How the foreground might be exploited, when, by whom and where**: Pay-for online training course offered by W3C in years 20012-13

- **IPR exploitable measures taken or intended**: Course protected by copyright

- **Further research necessary, if any**: further development and updates to course material

- **Potential/expected impact (quantify where possible)**: training revenues for W3C, Web developers educated in use of Audio/Video in HTML5

2.3. HTML5 and Games Training Course

- **Purpose**: Training of Web developers on HTML5 and Games

- **How the foreground might be exploited, when, by whom and where**: Pay-for online training course offered by W3C in years 20012-13

- **IPR exploitable measures taken or intended**: Course protected by copyright

- **Further research necessary, if any**: further development and updates to course material

- **Potential/expected impact (quantify where possible)**: training revenues for W3C, Web developers educated in developing games in HTML5

3. Report on societal implications

Replies to the following questions will assist the Commission to obtain statistics and indicators on societal and socio-economic issues addressed by projects. The questions are arranged in a number of key themes. As well as producing certain statistics, the replies will also help identify those projects that have shown a real engagement with wider societal issues, and thereby identify interesting approaches to these issues and best practices. The replies for individual projects will not be made public.

A	**General Information** *(completed automatically when **Grant Agreement number** is entered.*

Grant Agreement Number:	248687

Title of Project:	Open Media Web

Name and Title of Coordinator:	Dr. Philipp Hoschka, Deputy Director of W3C

B	**Ethics**	

1. Did your project undergo an Ethics Review (and/or Screening)?	
• If Yes: have you described the progress of compliance with the relevant Ethics Review/Screening Requirements in the frame of the periodic/final project reports? Special Reminder: the progress of compliance with the Ethics Review/Screening Requirements should be described in the Period/Final Project Reports under the Section 3.2.2 *'Work Progress and Achievements'*	*No*
2. Please indicate whether your project involved any of the following issues (tick box) :	*No*

RESEARCH ON HUMANS	
• Did the project involve children?	No
• Did the project involve patients?	No
• Did the project involve persons not able to give consent?	No
• Did the project involve adult healthy volunteers?	No
• Did the project involve Human genetic material?	No
• Did the project involve Human biological samples?	No
• Did the project involve Human data collection?	No

RESEARCH ON HUMAN EMBRYO/FOETUS	
• Did the project involve Human Embryos?	No
• Did the project involve Human Foetal Tissue / Cells?	No

• Did the project involve Human Embryonic Stem Cells (hESCs)?	No
• Did the project on human Embryonic Stem Cells involve cells in culture?	No
• Did the project on human Embryonic Stem Cells involve the derivation of cells from Embryos?	No

PRIVACY	
• Did the project involve processing of genetic information or personal data (eg. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)?	No
• Did the project involve tracking the location or observation of people?	No

RESEARCH ON ANIMALS	
• Did the project involve research on animals?	No
• Were those animals transgenic small laboratory animals?	No
• Were those animals transgenic farm animals?	No
• Were those animals cloned farm animals?	No
• Were those animals non-human primates?	No

RESEARCH INVOLVING DEVELOPING COUNTRIES	
• Did the project involve the use of local resources (genetic, animal, plant etc)?	No
• Was the project of benefit to local community (capacity building, access to healthcare, education etc)?	No

DUAL USE	
• Research having direct military use	No
• Research having the potential for terrorist abuse	No

C   Workforce Statistics

3.   Workforce statistics for the project: Please indicate in the table below the number of people who worked on the project (on a headcount basis).

Type of Position	Number of Women	Number of Men
Scientific Coordinator	0	1
Work package leaders	1	3
Experienced researchers (i.e. PhD holders)	1	1
PhD Students	0	0
Other	1	5

4. How many additional researchers (in companies and universities) were recruited specifically for this project?	
Of which, indicate the number of men:	0

D Gender Aspects

5.	**Did you carry out specific Gender Equality Actions under the project**?	○	Yes
		●	No

6. Which of the following actions did you carry out and how effective were they?

		Not at all effective	Very effective
❏	Design and implement an equal opportunity policy	○ ○ ○ ○ ○	
❏	Set targets to achieve a gender balance in the workforce	○ ○ ○ ○ ○	
❏	Organise conferences and workshops on gender	○ ○ ○ ○ ○	
❏	Actions to improve work-life balance	○ ○ ○ ○ ○	
○	Other:		

7. Was there a gender dimension associated with the research content – i.e. wherever people were the focus of the research as, for example, consumers, users, patients or in trials, was the issue of gender considered and addressed?

○ Yes- please specify

● No

E Synergies with Science Education

8. Did your project involve working with students and/or school pupils (e.g. open days, participation in science festivals and events, prizes/competitions or joint projects)?

○ Yes- please specify

● No

9. Did the project generate any science education material (e.g. kits, websites, explanatory booklets, DVDs)?

● Yes- please specify. *Training material related to WP2 courses.*

○ No

F Interdisciplinarity

10. Which disciplines (see list below) are involved in your project?

- Main discipline[12]: 1.1 Mathematics and computer sciences

○ Associated discipline**Error! Bookmark not defined.**: n/a	○ Associated discipline**Error! Bookmark not defined.**: n/a

G   Engaging with Civil society and policy makers

11a	**Did your project engage with societal actors beyond the research community?** *(if 'No', go to Question 14)*	○	Yes
		●	No

11b   If yes, did you engage with citizens (citizens' panels / juries) or organised civil society (NGOs, patients' groups etc.)?

- ● No

- ○ Yes- in determining what research should be performed

- ○ Yes - in implementing the research

- ○ Yes, in communicating /disseminating / using the results of the project

11c	**In doing so, did your project involve actors whose role is mainly to organise the dialogue with citizens and organised civil society (e.g. professional mediator; communication company, science museums)?**	○	Yes
		●	No

12.   Did you engage with government / public bodies or policy makers (including international organisations)

- ● No

- ○ Yes- in framing the research agenda

- ○ Yes - in implementing the research agenda

- ○ Yes, in communicating /disseminating / using the results of the project

13a   Will the project generate outputs (expertise or scientific advice) which could be used by policy makers?

- ○ Yes – as a **primary** objective (please indicate areas below- multiple answers possible)

- ○ Yes – as a **secondary** objective (please indicate areas below - multiple answer possible)

- ● No

13b If Yes, in which fields?

13c If Yes, at which level?

- ○ Local / regional levels

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[12] Insert number from list below (Frascati Manual).

O   National level

O   European level

O   International level

H   Use and dissemination

14. How many Articles were published/accepted for publication in peer-reviewed journals?	**N/a**
To how many of these is open access[13] provided?	**N/a**
How many of these are published in open access journals?	
How many of these are published in open repositories?	
To how many of these is open access not provided?	
Please check all applicable reasons for not providing open access:	
❑ publisher's licensing agreement would not permit publishing in a repository ❑ no suitable repository available ❑ no suitable open access journal available ❑ no funds available to publish in an open access journal ❑ lack of time and resources ❑ lack of information on open access ❑ other[14]: ……………	

15. How many new patent applications ('priority filings') have been made? *("Technologically unique": multiple applications for the same invention in different jurisdictions should be counted as just one application of grant).*		**0**
16. Indicate how many of the following Intellectual Property Rights were applied for (give number in each box).	Trademark	**0**
	Registered design	**0**
	Other	**0**
17. How many spin-off companies were created / are planned as a direct result of the project?		
Indicate the approximate number of additional jobs in these companies:		

18.   Please indicate whether your project has a potential impact on employment, in comparison with the situation before your project:

❑   Increase in employment, or   ■   In small & medium-sized enterprises

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[13] Open Access is defined as free of charge access for anyone via Internet.

[14] For instance: classification for security project.

■	Safeguard employment, or	❑	In large companies
❑	Decrease in employment,	❑	None of the above / not relevant to the project
❑	Difficult to estimate / not possible to quantify		

19. **For your project partnership please estimate the employment effect resulting directly from your participation in Full Time Equivalent (*FTE = one person working fulltime for a year*) jobs:** Difficult to estimate / not possible to quantify	*Indicate figure:* ■

I Media and Communication to the general public

20. **As part of the project, were any of the beneficiaries professionals in communication or media relations?** ● Yes   ○ No

21. **As part of the project, have any beneficiaries received professional media / communication training / advice to improve communication with the general public?** ○ Yes   ● No

22 **Which of the following have been used to communicate information about your project to the general public, or have resulted from your project?**

■	Press Release	■	Coverage in specialist press
■	Media briefing	■	Coverage in general (non-specialist) press
❑	TV coverage / report	■	Coverage in national press
❑	Radio coverage / report	■	Coverage in international press
■	Brochures /posters / flyers	■	Website for the general public / internet
❑	DVD /Film /Multimedia	❑	Event targeting general public (festival, conference, exhibition, science café)

23 **In which languages are the information products for the general public produced?**

■	Language of the coordinator	■	English
■	Other language(s)		

Question F-10: Classification of Scientific Disciplines according to the Frascati Manual 2002 (Proposed Standard Practice for Surveys on Research and Experimental Development, OECD 2002):

FIELDS OF SCIENCE AND TECHNOLOGY

1.   NATURAL SCIENCES

1.1 Mathematics and computer sciences [mathematics and other allied fields: computer sciences and other allied subjects (software development only; hardware development should be classified in the engineering fields)]

1.2 Physical sciences (astronomy and space sciences, physics and other allied subjects)

1.3 Chemical sciences (chemistry, other allied subjects)

1.4 Earth and related environmental sciences (geology, geophysics, mineralogy, physical geography and other geosciences, meteorology and other atmospheric sciences including climatic research, oceanography, vulcanology, palaeoecology, other allied sciences)

1.5 Biological sciences (biology, botany, bacteriology, microbiology, zoology, entomology, genetics, biochemistry, biophysics, other allied sciences, excluding clinical and veterinary sciences)

2   ENGINEERING AND TECHNOLOGY

2.1 Civil engineering (architecture engineering, building science and engineering, construction engineering, municipal and structural engineering and other allied subjects)

2.2 Electrical engineering, electronics [electrical engineering, electronics, communication engineering and systems, computer engineering (hardware only) and other allied subjects]

2.3. Other engineering sciences (such as chemical, aeronautical and space, mechanical, metallurgical and materials engineering, and their specialised subdivisions; forest products; applied sciences such as geodesy, industrial chemistry, etc.; the science and technology of food production; specialised technologies of interdisciplinary fields, e.g. systems analysis, metallurgy, mining, textile technology and other applied subjects)

3.   MEDICAL SCIENCES

3.1 Basic medicine (anatomy, cytology, physiology, genetics, pharmacy, pharmacology, toxicology, immunology and immunohaematology, clinical chemistry, clinical microbiology, pathology)

3.2 Clinical medicine (anaesthesiology, paediatrics, obstetrics and gynaecology, internal medicine, surgery, dentistry, neurology, psychiatry, radiology, therapeutics, otorhinolaryngology, ophthalmology)

3.3 Health sciences (public health services, social medicine, hygiene, nursing, epidemiology)

4.   AGRICULTURAL SCIENCES

4.1 Agriculture, forestry, fisheries and allied sciences (agronomy, animal husbandry, fisheries, forestry, horticulture, other allied subjects)

4.2 Veterinary medicine

5.   SOCIAL SCIENCES

5.1 Psychology

5.2 Economics

5.3 Educational sciences (education and training and other allied subjects)

5.4 Other social sciences [anthropology (social and cultural) and ethnology, demography, geography (human, economic and social), town and country planning, management, law, linguistics, political

sciences, sociology, organisation and methods, miscellaneous social sciences and interdisciplinary , methodological and historical S1T activities relating to subjects in this group. Physical anthropology, physical geography and psychophysiology should normally be classified with the natural sciences].

6.   HUMANITIES

6.1   History (history, prehistory and history, together with auxiliary historical disciplines such as archaeology, numismatics, palaeography, genealogy, etc.)

6.2   Languages and literature (ancient and modern)

6.3   Other humanities [philosophy (including the history of science and technology) arts, history of art, art criticism, painting, sculpture, musicology, dramatic art excluding artistic "research" of any kind, religion, theology, other fields and subjects pertaining to the humanities, methodological, historical and other S1T activities relating to the subjects in this group]