V4Design

V4Design
Visual and textual content re-purposing FOR(4)
architecture, Design ang virtual reality games

1st V4Design Newsletter (March 2018)

In this issue

CONTENT

In January 2018, the V4Design project was successfully launched with the aim to promote the re-use of visual and textual content, such as documentaries, paintings and their critiques so as to be repurposed and be used for the inspiration of architecture and video game (VR) designing. V4Design is a 3 year EU research project led by CERTH-ITI (Multimedia Knowledge and Social Media Lab) and co-funded by EU H2020 research and innovation programme. V4Design brings together creative industries from architecture and game design domain, documentary/news/film content providers, art galleries as well as software companies, research institutes and universities from Greece, Spain, Germany, Sweden, Netherlands, Switzerland UK and Belgium.

Nowadays large amounts of visual and textual data have been generated, which are of great interest to architects and video game designers, such as paintings, archival footage, documentaries, movies, reviews or catalogues, and artwork. However in their current form it is difficult to be reused and repurposed for game creation, architecture and design. In order to bridge this gap, V4Design will develop technologies and tools that allow for automatic content analysis and seamless transformation to assist the creative industries in sharing content and maximize its exploitation.

In this context, V4Design aims at developing innovative tools that will create enhanced multimedia and 3d complex digital objects from 2-dimensional image and video content that could be used as basis for architecture, design and VR game authoring applications.

In the first 3 months, the project has made significant progress in developing use case scenarios and studying relevant multimedia datasets.

Stay tuned with the project progress by following newsletter, web and social media network accounts to be informed about future project developments towards the efficient re-purposing and re-use of existing digital content.

V4Design goal is to: (1) re-use textual and visual content by enabling its efficient collection from content providers and crawling from public web resources; (2) re-purpose of content by developing novel approaches for 3D reconstruction and modelling, buildings and objects localization, aesthetics and style extraction, generation of 3D objects enhanced with semantics and explanatory text descriptions and (3) deploy innovative architecture, design and VR game authoring applications.

3. V4DESIGN APPROACH

V4Design will build upon the concept of semantic integration of heterogeneous 2-dimensional multimedia in order to generate enhanced dynamic 3-dimensional structures and environments. Towards this direction V4Design will collect data from the consortium partners, and the web by crawl online art libraries and databases for freely available content (textual and visual). The collected content will mainly be used to create dynamic 3D-models of objects, buildings/structures and environments and to support 3D and VR environments. Architects and video game designers will thus be able to easily access and use a realistic and comprehensive representation of structures of interest from various time periods and styles in an economical and cost-effective manner. Innovative results that integrate past aesthetic trends, localization of buildings and art-elements in visual data, text generation and semantic knowledge will also be produced as complementary material to support the design process.

The partners that formulate the consortium of the project are:

The Centre for Research and Technology-Hellas (CERTH) – Information Technologies Institute **(Coordinator)**

KU Leuven

Universitat Pompeu Fabra (UPF)

Robert McNeel & Associates

Herzog & de Meuron (HdM)

The Aristotle University of Thessaloniki (A.U.Th.)

Solaris Filmproduktion GbR (SFd)
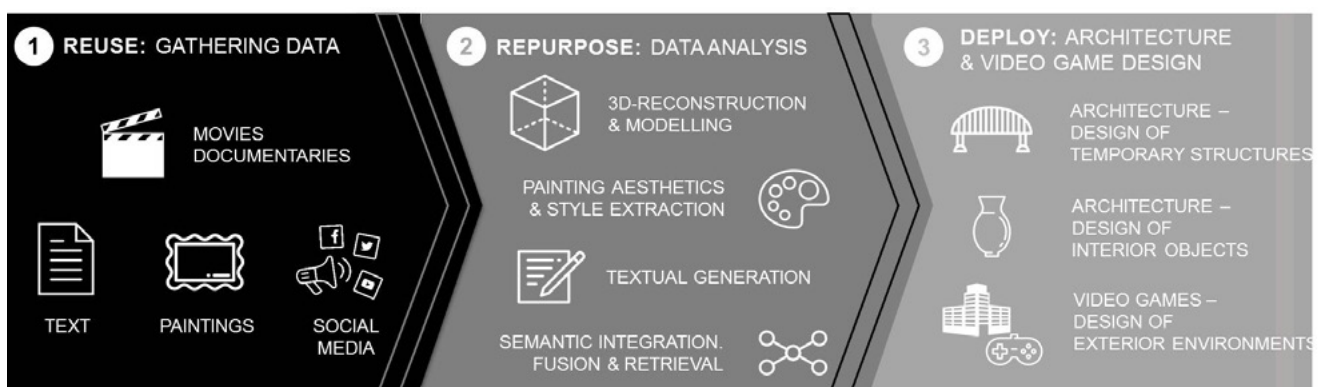
ArtFilms Ltd (AF)

Deutsche Welle (DW)

Europeana Foundation (EF)

Nurogames (NURO)

5. OBJECTIVES

To reach the goal of content repurposing, V4Design has set the following objectives:

- Collection of visual and textual digital content (i.e. movies, documentaries, paintings, artworks, and relevant textual content).
- Visual analysis and 3D reconstruction of image and video digital content related to buildings, cityscapes, contemporary, renaissance, medieval and ancient artwork to extract meaningful metadata for architects and video game designers for building interior and exterior environments.
- Analysis of critics, scripts, catalogues, museum guides and other textual data related to the visual content.
- Aesthetic analysis of visual content to extract styling and aesthetic features.
- Semantic content enrichment based on ontologies and reasoning.
- Personalized summarizations generation based on the content of textual and visual material.
- Development of platform for designers, game creators and architects for designing using semantically enriched 3D and multimedia objects.
- Evaluation of the platform based on 4 pilot use cases driven by the creative industries (design, architecture, games) needs**.**

6. EXPECTED RESULTS

1) A search engine of semantically enhanced 3d and multimedia objects integrated in a tool for designers and architects (e.g. Rhino platform).

2) An authoring tool for virtual reality game design integrating a search engine for 3d and multimedia objects.

3) Content analysis modules and services (e.g. localization of objects and buildings, extraction of architectural 3D models, extraction of aesthetic concepts and emotional affect, embedding of semantic knowledge in dynamic 3D models, etc.), under commercial, open source or freeware licenses.

7. PILOT USE CASES

Use Case 1

Architectural design, related to existing or historical buildings and their environments

Users: Architects, designers and artists

Scenario 1: Support the design process of pavilions, land art, scenography (Landscape)

Topic: Historical landscape in the Mediterranean, Greece

Storyboard: Local authorities commissioned an independent festival organizer to make proposals for outdoor temporary installations (pavillion, land-art, scenography) for an historical site in Greece, e.g. temporary infrastructure for drama and theatre plays, outdoor events, accessibility etc. The creative team responsible for the task will use V4Design in order to find related material for research upon the topic. They are going to need information (3D, 2D and textual) of local natural and cultural environment and the topography in order to examine the possibilities of the site of intervention. Also they will use it to produce all the necessary material to better communicate their design proposals to the organizers. The output from the tool is going to be used to produce 360° Images, 360° Animations, Class A Rendering, Animation, VR Scenes, final proposal explanatory texts and analysis etc., images and other visual content.

Scenario 2: Architectural design, related to existing or historical buildings and their environments (Building)

Topic: Central Berlin, Germany

Storyboard: An architecture office is commissioned to design a building (addition, extension) in central Berlin , Germany in direct relation to a landmark building of 60's Modernism (Philarmonic by Scharoun, or Neue National Gallerie by Mies van der Rohe) or new landmark building (Neues Museum by HdM, etc.). The building will host culture related activities**.**

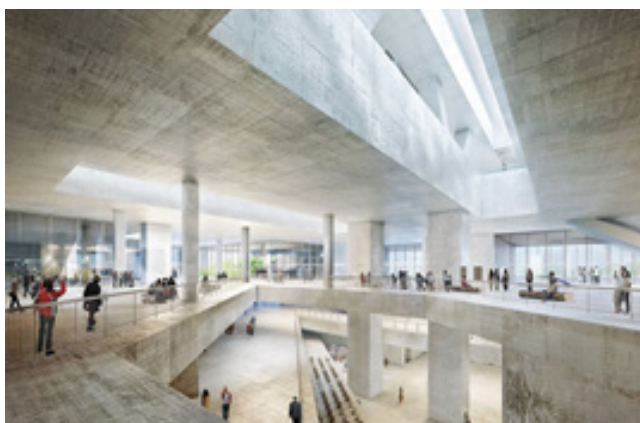## Use Case 2

Architectural design, related to artworks, historic or stylistic elements

Users: Architects, interior architects and product designers

Scenario: Architectural design, related to artworks, historic or stylistic elements (Object, Interiors)

Topic: East Asian Visual Culture

Storyboard: An architecture office is commissioned to design the interior environment of a museum in east Asia (M+ Museum by HdM) in order to host a thematic temporary exhibition on Chinese calligraphy. Design includes the following: signage, furniture, lighting, exhibition partitions, visual identity and tapestry**.**

Use Case 3

Design of virtual environments, related to TV series and VR video games

Users: Visual content producers (film, TV industries)

Scenario: Creation of a VR video game based on the scenes of a telenovela.

Topic: Nico's Weg

Use Case 4

Design of virtual environments, related to actual news for VR (re-) living the date

Users: Worldwide users that want to live or re-live news events in a VR environment

Scenario: Creation of a VR application based on historic events

Topic: Immersive Documentary based on historical timeline

8. NEWS

Participation in Events/Conferences

V4Design has participated in the High-level Horizon 2020 conference of The European Year of Cultural Heritage that took place in Brussels at the 20th of March 2018.

Upcoming events:

- REACH Opening Conference at Budapest, Hungary (10 - 11 May, 2018)
- Total CHAOS 2018 at Sofia, Bulgaria (18 – 19 May, 2018)
- Digital Assembly 2018 at Sofia, Bulgaria (25- 26 June, 2018)

9. PROJECT MEETINGS

Kick-off meeting: Thessaloniki 17-18/1/2018

The kick-off meeting was hosted in the premises of CERTH-ITI in Thessaloniki from 17th until 18th of January, 2018. At the beginning of the first day, the Project Coordinator, Stefanos Vrochidis, welcomed the Consortium partners and presented them the project's general information.

Short presentations of each Consortium partner were followed. Thereafter, each WP leader presented the work plan under each Work Package. At the second day, pilot use cases and data collections needed for the implementation of methods and techniques have been discussed.

1st User workshop: Cologne 1-2/3/2018

V4Design users workshop took place in Cologne at the 1st and 2nd of March. The users were split into two teams, one for the architecture and one for the virtual reality game design and had a detailed conversation about the use cases and user requirements.

Both teams concluded in specific and realistic use cases, future goals and paths were paved through conversations, while indicative demonstrations of 3d environments that V4Design is expected to generate were also conducted with the use of Virtual Reality (VR).

10. CONTACT INFORMATION

Follow our steps on..

Project website:

www.v4design.eu

Social media:

FACEBOOK: /V4DesignProject

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