



MindSpaces

Art-driven adaptive outdoors and indoors design

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D8.1

Initial dissemination plan and communication material

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Abstract

The objective of this document is to define dissemination goals and guidelines that are to be

followed by all partners. In this context, D8.1 presents the dissemination principles of MindSpaces and defines specific targets. In addition, it presents planned dissemination materials (web, factsheet, presentation, flyer, etc.), events and venues standardisation activities, as well as the role of the MindSpaces User Group.

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Executive Summary

Deliverable D8.1 has a double role. On the one hand, it presents the identity of the MindSpaces project, including the project website, flyer, etc. On the other hand, it describes the dissemination activities foreseen by MindSpaces. First it elaborates on the basic dissemination principles, including target audiences, key messages and timing of actions. The deliverable then describes the dissemination strategies focusing on events and products. This is followed by the dissemination materials for MindSpaces, which include the project website, the communication kit (presentation, poster, and flyer), the factsheet, the press release and the newsletter. The dissemination plan then describes in detail scientific and commercial events targeted for participation, as well as scientific journals for article publication. In addition, a calendar view is provided with the most important and already scheduled events. Then, the deliverable lists the first participants of the User Group and describes their role in the project. Concluding, the deliverable names the planned standardisation activities.

Abbreviations and Acronyms

AEC	Architecture, Engineering and Construction
AR	Augmented Reality
BIM	Building Information Modelling
CAD/CAM	Computer-Aided Design & Computer-Aided Manufacturing
CGI	Computer-Generated Imagery
DT	Digital Technologies
EBU	European Broadcasting Union
GIS	Geographic Information System
GMF	Global Media Forum
ICT	Information and communication technology
NDA	Non Disclosure Agreements
NLP	Natural Language Processing
PUC	Pilot Use Cases
SME	Small and Medium-sized Enterprises
UG	User Group
VFX	Visual Effects
VR	Virtual Reality
WP	Work Package

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1 INTRODUCTION

MindSpaces is a STARTS lighthouse project that aims to create the tools and develop the solutions for adaptive and inclusive spaces that dynamically adapt to emotional, aesthetical and societal responses of end users, creating functionally and emotionally appealing architectural design.

Original 3D models of spaces to be developed by architects and artists will be used as a basis to propose innovative, art-inspired outdoors environments for a city, indoors workspace and house re-design. The design ideas will be integrated artistically in VR (Virtual Reality) environments, which will be modified in real time in response to EEG (Electroencephalography), physiological and environmental measurements of end users. This will lead to dynamic designs that immediately adapt to users' emotional and functional needs.

Artists and technology experts will closely collaborate under a novel working model scheme to propose innovative designs to address societal challenges faced by cities as they expand, and the evolving needs in functionality and emotional resonance of modern day workplace and housing interiors.

1.1 Dissemination basic principles

1.1.1 Target audiences

In order for people to benefit from MindSpaces they must be reached by the new knowledge or results produced by the project. The project team will therefore identify the different individuals, groups, and organisations and their specific interests in the project developments, particularly with respect to a possible continuation of research at the end of the project. This includes the need to inform and engage stakeholders. A stakeholder can be defined *as any group or individual who can affect, or be affected by the achievements of the research project - or can influence these results*. In addition, MindSpaces knowledge and results will be shared and exchanged with other European projects, with the scientific community and with standardisation bodies.

In this respect, MindSpaces will systematically and continuously identify the target audiences with interests that are pertinent to the project outcomes and make sure to keep their interests alive throughout the project. In this respect, some of the target audiences that have been already identified by the partners can be categorised in terms of the following groups:

- End users, including:

-
- Market-oriented groups such as in-house or freelance
 - Architects in academic environments (teachers, students)
 - Professional architecture offices
 - Local citizens
 - Real Estate Building Developers with vested interest in how people use space
 - City councils
 - Cultural heritage institutions such as:
 - Galleries, libraries, museums or archives that want to increase the visibility and accessibility of their digital collections.
 - Contemporary Art exhibitions
 - Cultural heritage institutions that possess 3D cultural heritage objects and want to add them to the MindSpaces platform for greater visibility, accessibility and reusability.
 - Digital cultural heritage institutions that benefit by embedding or otherwise reusing the MindSpaces platform on their own digital platforms.
 - Developers and companies offering ICT solutions including:
 - Small and Medium-sized Enterprises (SME) offering 3D-reconstructing and 3D-modelling services, BIM/GIS building models, video analysis and/or software of the above.
 - Small and Medium-sized Enterprises (SME), offering digital tools for artists such as painting tools and artistic content generation.
 - Companies that use 3D, AR and VR tools in developing design for human places, including urban environments.
 - Large/industrial corporations that are interested in integrating/reselling the produced modules/technologies of MindSpaces that are either open-source or are commercial products sold by the corresponding partners.
 - Research and academic groups including:
 - Research and academic groups in relevant areas addressed by MindSpaces that are interested in methods/techniques applied in several research fields such as multilingual concept extraction, sentiment analysis, semantic representation, text generation, computational design, parametric design, methodologies that facilitate the work of inter/anti-disciplinary teams.
 - Research and academic groups related to the fields of architecture and design, which include students of architecture, professors and teaching staff.
 - Research and academic groups in the field of that could benefit by using the MindSpaces platform and its associated content for academic research, e.g. City Sciences Laboratories. Smart cities/ buildings.
-

- Seniors and institutions dedicated to senior care, senior social activities, senior well-being and senior housing.

For each dissemination activity listed on section 3.4 we report the corresponding target audience. The aim is to ensure that all stakeholders are covered by our dissemination activities at the end of the project.

1.1.2 Key messages

The project will define a clear message to be sent to the target audience. Therefore, an accurate identification of the target audience affects the way this key message will be formulated and expressed. It is in this regard necessary to think about the characteristics, needs and preferences of the person on the receiving end, their perception on the project and how to communicate this clearly in order to attract attention and curiosity in MindSpaces.

Therefore, it is obvious that the expectation and interests of the aforementioned groups of the target audience vary significantly. For instance, while detailed technical results may be significant for the group of researchers, academics and developers, they certainly will not raise sufficient interest among the end users of MindSpaces, unless the implications of these technical results are properly communicated. Similarly, in the case of seniors as end-users, communication should focus more on concepts of well-being, active ageing, aesthetics and innovation through arts.

In conclusion, the background of the target group affects the way that the key message is expressed and the type of information that is of interest and that should be communicated. For this reason, the information presented to the several dissemination activities should be in line with the targeted audience of the specific event.

1.1.3 Timing of actions

It is important to decide on which different dissemination activities will be most relevant for each case during the lifecycle of the project. This means that the conveyed messages have to be aligned with these cases and circumstances. For example, it is better to build a strong awareness of the project at the start, while focusing on “selling” achievements towards the end of the project. It is also important to think about the communication timetable and requirements of the target audience. For instance, there are periods during the academic year, when it is difficult to reach academic staff (e.g. at the start of the term or during examinations). It should be kept in mind that a message needs to reach the receivers several times (the average is at least three) before a reaction occurs. Therefore, the messages should be repeated several times, potentially through various channels and tools.

At this point of the project (3 months after the start of project activities), it is understandable that a general product of the MindSpaces, even in an initial stage, is not yet developed. Therefore, the partners will promote the project by informing the potentially interested target audience regarding the vision, objectives, use-cases, modules implicated and the research areas of interest that will be handled during the next months. Section 3.4 contains a calendar of the project with the main conferences, exhibitions and events that had already participated in, the ones scheduled and others planned on participating in.

1.2 Dissemination strategies

There is a wide variety of dissemination methods. Appropriate knowledge and skills are necessary to select the right one(s) to get the message across to the target audience and achieve the goals set out by the dissemination strategy.

A further aspect that should be considered is the necessary continuous adjustment and development of the dissemination plan. This is due to the on-going nature of a research and innovation project like MindSpaces. The project team has to be aware of these changes occurring during the implementation of the project, while at the same time the project team should adjust them to the reaction from the public and the impact of the dissemination activities.

Hence, in settling a dissemination strategy, the project team will take the following questions into consideration:

- **Project objectives:** What is the main objective of the project? What are the sub-goals of the project? What are the expected results? How will they serve the needs of the target beneficiaries related to the objectives of the project?
- **Target audience:** For which target audience should a specific result and/or the overall result of the project be disseminated? What is the significance of that result(s) for that target group? Are the target beneficiaries likely to realise the significance or do they need specific assistance to understand the benefits for them?
- **Dissemination goals:** What are the objectives and goals of the dissemination effort? What impact is the dissemination plan aimed at and what is it actually producing?
- **Medium:** What are the most effective channels and tools to reach target audiences? Which methods fit best to their level of awareness and understanding? Which resources are necessary? How can the use of different tools effectively be combined?
- **Execution:** When should the dissemination activities be implemented (e.g. at which points during the study and afterwards)? Who will be responsible for dissemination activities? Will the potential users be involved into the discussion of the results and will their feedback be used to improve the applicability of the final results?

The different dissemination methods planned to be exploited in MindSpaces are further detailed in Tables 1 and 2.

Table 1: Dissemination methods: Events vs. Products

Events	Products
<ul style="list-style-type: none"> • User days • Open days • Stands and demonstration meetings • Common projects meetings • Scientific conferences • Workshops • Art exhibitions 	<ul style="list-style-type: none"> • Website • Posters • Flyers/brochures • Press releases • Press Kit (including other media) • Newsletters • Articles in peer-reviewed journals and conferences • Case studies • Reports and other documents • Link promotion • Public platform-based dissemination • Artworks • Art installations • Exhibitions of the ongoing process

Table 2: Dissemination methods – details

Events		
Method	Purpose	Hints and Tips
User days	<ul style="list-style-type: none"> Engage 	<p>User days target the following objectives:</p> <ul style="list-style-type: none"> (i) to demonstrate the prototypes to potential users, (ii) to enhance the objectives of the project, (iii) to discover use-cases that haven't been considered, (iv) to evaluate experimental techniques, (v) to look and comment on the results and (vi) to provide feedback for improvements. <p>User days might contain seminars and tutorials so as to promote the techniques and tools developed in the project both in the academic and the industrial community.</p>
Open days	<ul style="list-style-type: none"> Engage 	<p>The objectives of these events are:</p> <ul style="list-style-type: none"> (i) to present lessons learned in MindSpaces and illustrate its first results by demonstrations, (ii) to offer the interested parties the possibility to experiment with the MindSpaces workbench in "hands-on" sessions, (iii) to provide a user forum for networking with professionals from related areas, and (iv) to obtain feedback from the participants.

Stands and demonstration meetings	<ul style="list-style-type: none"> Engage 	Demonstrations allow showing project developments and getting feedback for further technical advancements and changes. Demos are useful early in the project to get feedback from stakeholders on functionality, usability as well as look-and-feel.
Common projects meetings	<ul style="list-style-type: none"> Engage 	Projects (and cluster) meetings are excellent opportunities for projects to learn from each other, discuss common issues, and get feedback on the work of every project partner.
Scientific conferences	<ul style="list-style-type: none"> Engage Promote 	National and international conferences are an important opportunity to share project achievements with experts in the field. Suitable conferences with high impact will be selected, attracting the experts' attention.
Workshops	<ul style="list-style-type: none"> Engage 	Workshops, as small interactive events, can be used to get feedback from users on a demo or from experts on a particular issue. The focus should be on discussion to further future development.
Exhibitions and shows	<ul style="list-style-type: none"> Inform Engage Promote 	To present ongoing or end results, as demonstrations, artworks, interactive artworks presenting the methodology.
Products		
Website	<ul style="list-style-type: none"> Awareness Inform Engage Promote 	The project website is one of the most versatile dissemination tools. Plenty of information will be available there for different audiences. Regular updates will make users return to the site. The website will be a place to sell the project and engage the community. The website presence will be supported by its further interconnectivity with connected social media presence.

Posters	<ul style="list-style-type: none"> • Engage • Promote 	Posters are an excellent way to get people's attention and engage them in a discussion about the project, gauge their reactions, and get one-to-one feedback.
Flyers/brochures	<ul style="list-style-type: none"> • Awareness 	Printed flyers can be very helpful in raising interest of people at conferences etc. They can be handed out easily to people passing by or to colleagues at partnering institutions. An electronic version can also be circulated via website or social media.
Press releases	<ul style="list-style-type: none"> • Awareness 	Press releases should be issued to announce important achievements publicly.
Newsletters	<ul style="list-style-type: none"> • Awareness • Inform 	The newsletter announces the project, gives regular updates, develops a profile, and gets buy-in from the target audience. For example, including an interview with your project 'champion', some quotes from end users, or praise from an external evaluator are possible. It aims to make sure that the target audience knows of project developments and updates.
Online discussion lists	<ul style="list-style-type: none"> • Awareness • Inform • Engage 	Email lists are useful for discussing new developments, problems, and issues. They are an opportunity to be proactive and reactive, when used to share learnings with the community and develop a profile for the project. We may join a number of lists in relevant areas. Email lists can also be used for announcements, e.g. an achievement, something new on the project web site, or an upcoming project event. During the project we may also want to contribute to electronic newsletters.

Articles in peer-reviewed journals and conferences	<ul style="list-style-type: none"> • Inform 	Opportunities to get articles about the project published should always be seized as they offer a great way to attract more community members.
Case studies	<ul style="list-style-type: none"> • Inform 	Case studies are good for explaining the progress reached up to a certain point as well as key findings from the project so others can benefit from the experience.
Reports and other documents	<ul style="list-style-type: none"> • Inform 	Reports and other documents provide details or intermediate results that are not integrated in the project deliverables. Intermediate reports can be used for disseminating intermediate results of the project and to keep people interested.
Link promotion	<ul style="list-style-type: none"> • Awareness • Promote 	The goal of this method is to promote MindSpaces through the sites of other public institutions, academic organisations and private initiatives using their navigational tools, their user community tools, their contents, banners and ads, etc.
Public platform-based dissemination	<ul style="list-style-type: none"> • Awareness • Inform • Promotion • Engage 	This type of dissemination aims at publishing short definitions, videos and presentations of MindSpaces in public world-wide accessible platforms like YouTube, Wikipedia, Joinup, etc.
Artworks	<ul style="list-style-type: none"> • Engage • Inform 	Artworks as a means to communicate the research and to enhance/improve interactions.

These dissemination activities correspond to specific actions that will be realised during the project. As already mentioned in section 1.1.3, given that we are in the first months of the project, only specific types of actions can be taken. In this context, Section 3.2 presents specific academic and industrial events, conferences and journals that will be targeted by the partners for the first year of the project.

2 DISEMINATION MATERIAL

The dissemination material includes the following instruments:

- Website
- Communication kit including the project's flyer, poster and overview presentation
- Factsheet
- Press kit
- Newsletter
- Dedicated pages on social networks
- Social Media

2.1 Website

MindSpaces aims to create a novel approach to urban and architectural design by generating 3D-VR immersive and emotion-adaptive 'neuro-environments' that will help in designing emotionally-relevant urban spaces. The central objective of MindSpaces is to create the tools and develop the solutions for adaptive and inclusive spaces that dynamically adapt to emotional, aesthetical and societal responses of end users, creating functionally and emotionally appealing architectural design.

The emotional aspects of an environment will be captured through the use of mobile EEG (Electroencephalography) headsets, wearable bracelets/ watches, and other physiological sensors that will be embedded with a VR-headset, so as to allow capturing the neurofeedback of a VR-experience. The neuro-feedback will allow the virtual space to be adapted accordingly, resulting in an emotion-adaptive space. The 'neuro-environments' will be used at two levels of granularity. At the first level, artists and creatives will experience the 'neuro-environments' with the intention to improve the emotional-relevance of the urban space through the neuro-feedback of individuals, that have very-well developed the perception of aesthetics in what refers to symmetry and harmony but also to unconventional thinking leading to unexpected solutions. At the second level, the 'neuroenvironments' will be experienced by the potential occupants of the urban space, so as to improve the emotional-relevance of this space through the neuro-feedback of individuals that have developed through experience the perception of space usability, comfort and functionality. This will allow MindSpaces to combine the transversal competencies and unconventional thinking of Artists, with the empirical and pragmatic perception of actual occupants, so as to drive the development of unconventional and unexpected solutions in the design of urban spaces.

A Research Innovation and Art related action like MindSpaces can only be successful and achieve an important impact, if it establishes good connections with interested researcher, artists and user communities. This is important for exchanging information, keeping up to date with the latest developments and disseminating the results and artworks.

Nowadays, this can be best achieved through digital channels, such as traditional and social media but also through a website. The website has the advantage of being able to present information to a diverse group of people at the same time and on demand. It can not only provide basic information that is static e.g., the project's description and its envisioned outcomes, but also deliver reoccurring and constantly changing pieces of information such as progress reports, exhibitions, artists residencies, artworks, latest achievements or news reports produced during the project's lifetime.

The purpose of the section is to describe the MindSpaces website providing an abstract presentation along with insights of the MindSpaces website.

The MindSpaces website will be a core part of the project's communication and fulfil the objectives mentioned in subsection 2.1.1. Then, subsection 2.1.2 discusses the main goals of the website, while subsection 2.1.3 provides an overview of the website and presents its structure in detail. Finally, subsection 2.1.4 concludes this section.

2.1.1 Objectives

The project website serves as one of the main communications and dissemination means. It has several objectives:

1. The website has been designed to provide the project's overview and status update and point out project's highlights. It will present information about concepts, vision, objectives and (expected) outcomes of the MindSpaces project.
2. The focus lies on the website's main/landing page. There, the goals of the project will be described in a comprehensive way. Furthermore, the user will find there a collection of project's highlights, such as latest news, recently published reports, etc. providing a quick insight into project's status.
3. The website will give an overview on planned project's events, including e.g. user group meetings, open days, conferences and workshops. Also, it will offer links to other relevant websites and links to partners' websites.
4. Using Web 2.0 features (such as the search functionality), the website will enable users to look for specific content on this website. Furthermore, the project will establish a constant presence in relevant social media channels, which will be presented on the website. (Facebook, Twitter, LinkedIn, Instagram)

5. All publicly available results of the project (such as public deliverables, presentations, publications, and resources including code snippets and datasets developed in the project) will be made accessible on the website.

6. MindSpaces website will also include contact details, in order to get in touch with the project's team.

7. The website will fulfill the needs of different target groups, such as artists, AR/VR specialised, the creative industries, private and public companies, the research community and the general audience

In general, we envision the website as a dynamic platform that grows over time and meets the developed objectives.

2.1.2 Main goals of MindSpaces Website

The website <http://www.MindSpaces.eu/> will be the face of the MindSpaces project to the world. It is expected to work as a central point of attraction for everyone interested in the work of the consortium towards the project's objectives.

The main goals of the website are:

- informing an interested public about MindSpaces and its progress
- attracting an audience of people interested in MindSpaces by communicating the ongoing activities with the use of social media and newsletters.
- connecting to the community of experts in the research field of MindSpaces

The website uses a clear structure and common language to describe the project. This facilitates the presentation of information regarding the envisioned goals, the current state, as well as the ongoing activities of the MindSpaces project. To display an example of the website's structure, a part of the home page is illustrated in **Figure 1**.

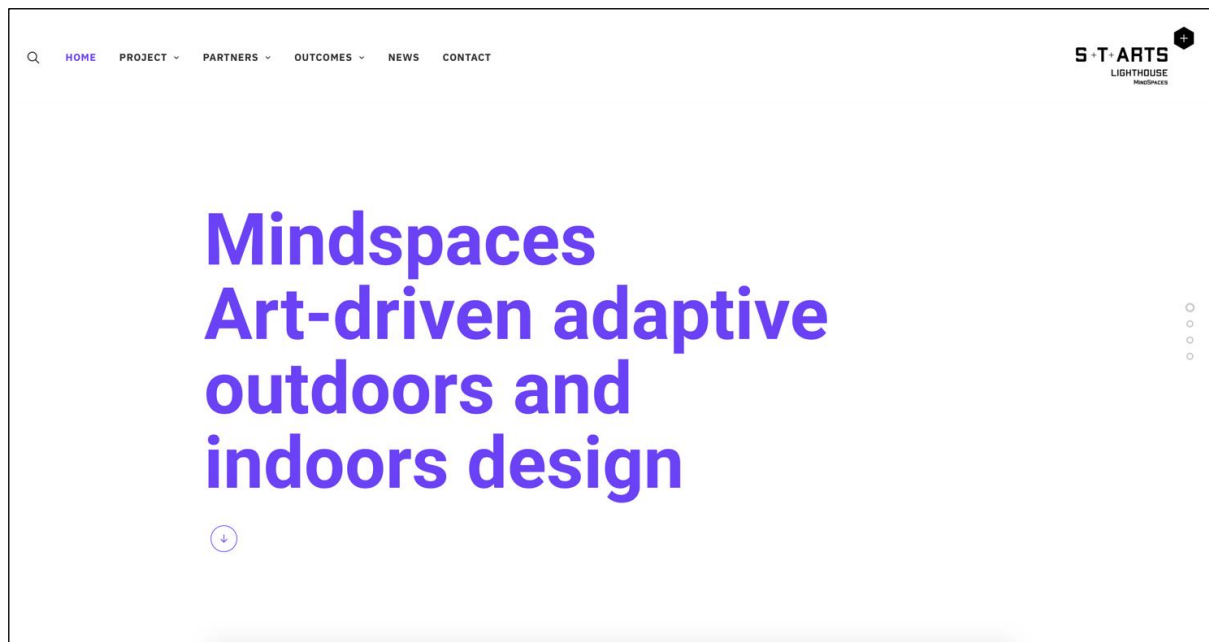


Figure 1: MindSpaces home page

The MindSpaces website will be maintained during the project lifetime and at least 2 years after the end of the project.

2.1.3 Structure of website

The website is subdivided into six different parts that focus on different content. In the following the single parts are described.

○ Overview and Home Page

At the top of every Web page on the website the user is offered a well-structured header/menu bar leading to Web pages with more detailed information as shown in **Figure 2**. The categories (Home; Project; Partners; Outcomes; News; Contact) shown give additional insights into the project and its partners, present the achievements of the consortium and offer a deeper understanding of what to expect from the project in terms of practical use. They also give an overview of latest news and provide links to other related projects and contact details in order to get in touch with the project's team. Moreover, a search icon is located on the left of the menu bar allows the user to conduct a text query to look for specific content on this website.



Figure 2: Header/Menu bar of the MindSpaces website

At the footer of each Web page (**Figure 3**), the user is given the option to follow MindSpaces through its social media. Relevant links are provided. Also, in the footer the website visitor can see information about the EU funding of the project.

The home page is always available to the user in three ways: by clicking on a) the MindSpaces logo, b) the “Home” option in the menu bar and c) the “home” icon, whenever it appears in the path below the logo and the menu bar.

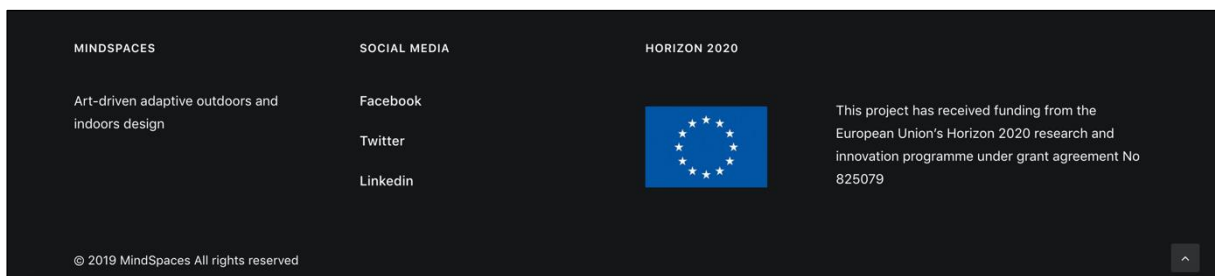


Figure 3: Footer of the MindSpaces website

In the home page, there is a vertical arrangement of sections (MindSpaces title, Open Call, News, Consortium Partners) that change with a small animated delay. Just below the menu bar, there is a big typography element that contains the project’s title. Its purpose is to visually welcome and attract the users’ attention. Below this title element, and into the next section the user is presented with an open call for artists about the project. By clicking on it the user is transferred to the open call page to read additional information. The next section contains the latest news and posts of the project. There the user can find information about the latest announcements, consortium partners meetings and reviews and the progress of the project in general. Last section contains a grid with logos of the consortium partners along with links to their internal MindSpaces partner page where one can find short pieces of information and biographical information about the people behind the project. All the content is prominently placed in a clear and easy-to-read structure. Content can include text, pictures, as well as videos. The combination of all three multimedia elements will be used to present information about the project in an interesting manner to visitors. By clicking on the most recent entries, the user is offered additional details on the selected topic. Finally, the

website structure allows the administrator of the website to further adjust the number and content of its section in order to better convey the project's goals and information.

○ Project Information

Clicking/Selecting “Project” tab (**Figure 4**) the user can read details about the targets of the project (“Aims & Objectives”) and find a conceptual architecture image showing how the single work package is connected with each other. Additional information with respect to each work package separately is shown in the “Project Structure” Web page. “Project” tab also offers an overview on the elements that comprise the expected outcome of the project (“Expected Results”), including a brief explanation.

In the “Pilots Use Cases” Web page, the use cases on which this project will focus are outlined, providing hyperlinks from which the user can be directed to Web pages containing detailed information about the three project use cases, namely:

1. Outdoors urban environment
2. Inspiring workplaces
3. Emotionally-sensitive functional interior design

MindSpaces is not the only EU project that is currently dealing with the same research agenda. The “Related projects” subentry lists projects dealing with similar research topics, including a) links to them, b) a short description on how the projects differ from MindSpaces and c) the identified synergies (**Figure 4a**). MindSpaces will stay in close contact with these projects to assure the reuse of projects' results wherever it makes sense. Furthermore, close collaborations will be established with these teams to gain from synergies and avoid interferences.

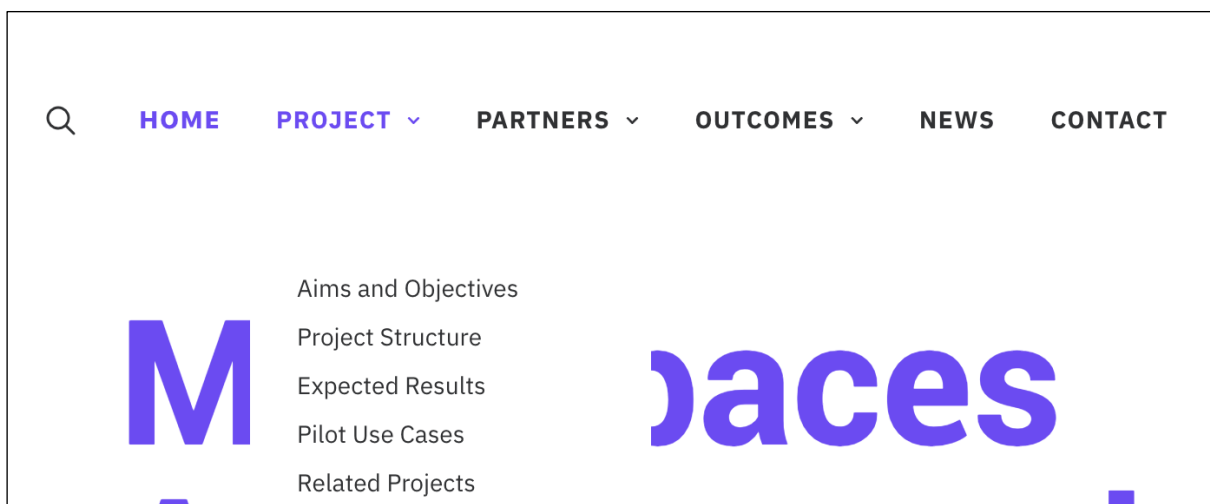


Figure 4: “Project” tab and its subentries

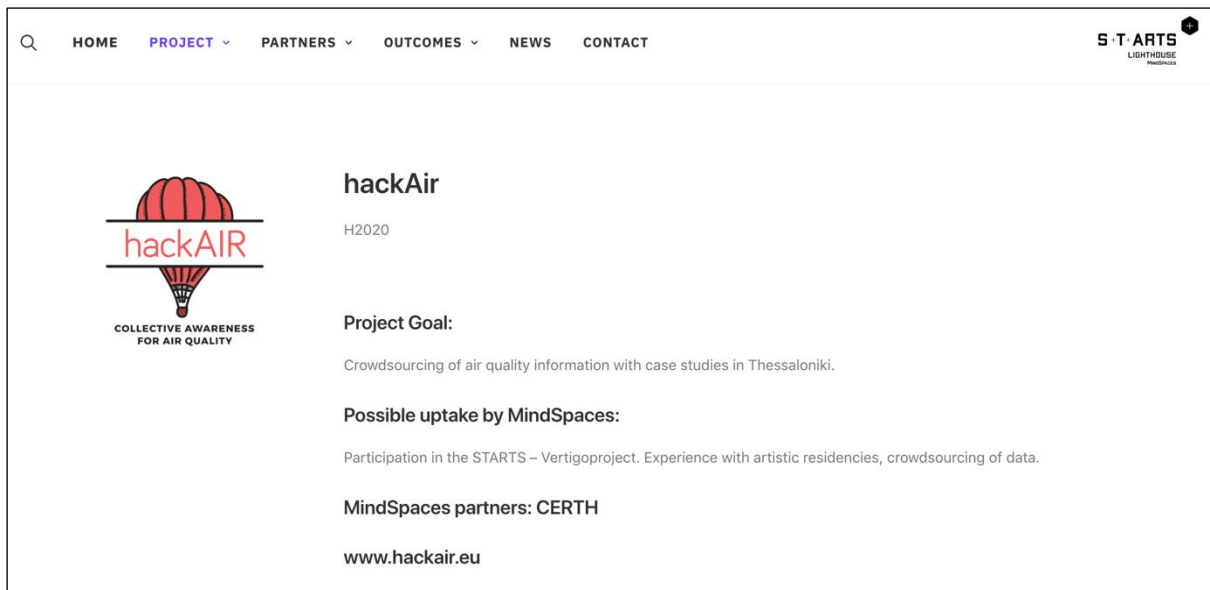


Figure 4a: “Related projects” webpage

○ Partners

There are three options under the “Partners” tab (**Figure 5**). The first one leads to a Web page providing a brief presentation of the project partners (“Consortium”) involved in MindSpaces. The second option (“User Group”) leads to a Web page providing a brief presentation of organisations that are not partners of the MindSpaces consortium and wish to join the “MindSpaces User Group”. The involvement of such organisations is described and a registration form is provided for anyone who wants to express their interest in adding their organisations to the members of this group. The third sub entry is linked to a webpage with information about the advisory board.

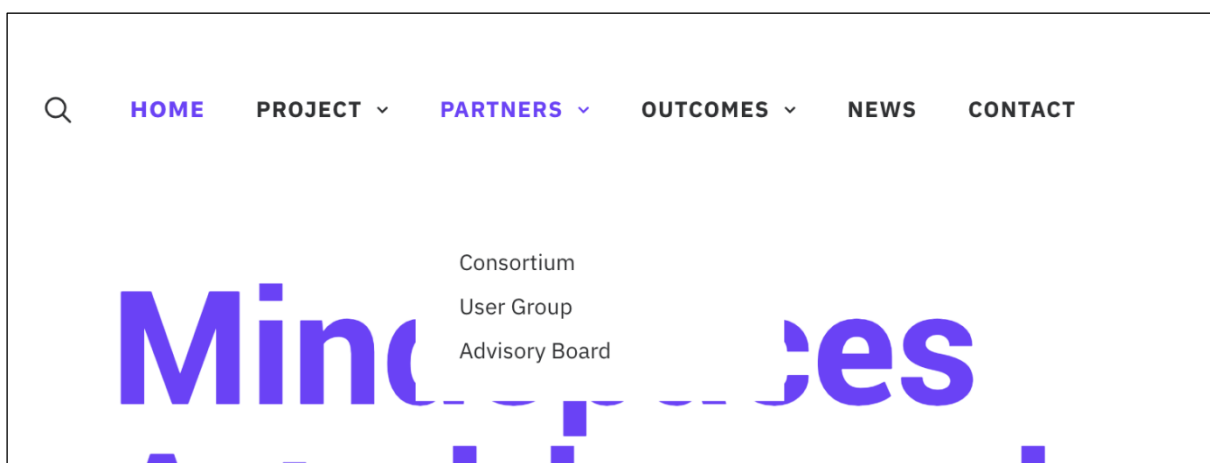


Figure 5: “Partners” tab and its subentries

○ Outcomes

In order to give the user a better understanding of the current state of MindSpaces we provide all project results that can be made public under the “Outcomes” tab (**Figure 6**).

Here the project offers a list of all “Public Deliverables” that are available for download. Users can easily follow the project status and also get more information on every deliverable reached (currently there are no download links since no public deliverables are available yet).

There is also a Web page for “Publications” deriving from the project’s work. This includes all publications like academic papers on the project, media coverage on exhibitions and related artworks, press releases issued by the project team as well as media coverage on MindSpaces, such as interviews and reports in any form (text, audio and video) or project’s reports. All information will be downloadable under Creative Commons license.

For people interested in reusing the results of the project, the website offers the download of “Resources”, which refer to code (under Creative Commons license) as well as datasets produced/reused within the frame of MindSpaces. All code fragments and datasets that are foreseen to be publicly available can be found here, either directly or via links to code libraries (currently these Web pages are empty since no code and/or datasets are available yet).

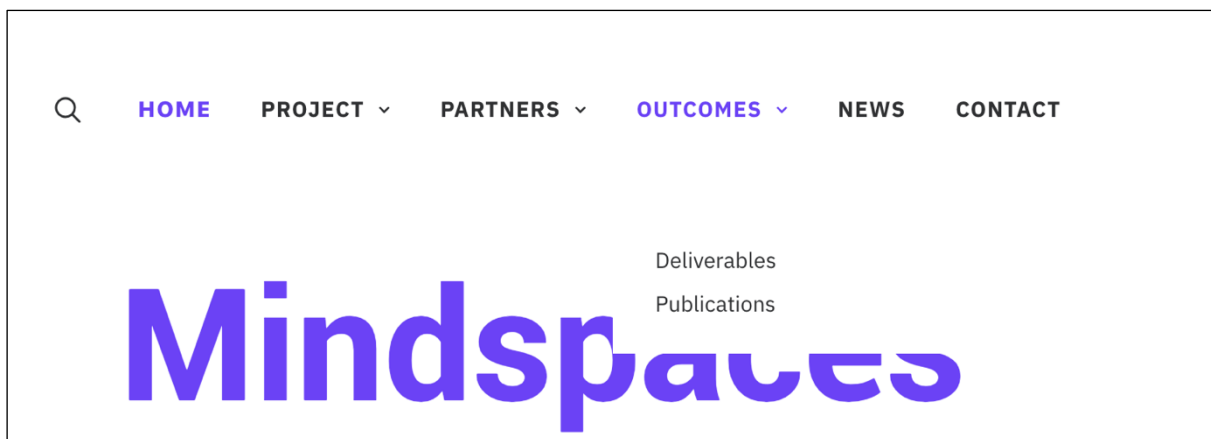


Figure 6: “Outcomes” tab and its subentries

○ News

The “News” tab consists of a single Web page. Any update related to the project will be added to this Web page. The intention of creating this Web page is to enable the users to keep track of the progress of the MindSpaces project. A preview of every news post is

provided with the option of being navigated to a Web page with more details on the respective news. While this report had been prepared, one post was published on the “News” Web page of the website (**Figure 7**).



Figure 7: “News” webpage and MindSpaces’ first post

○ Contact

This Web page (**Figure 8**) provides the user with all the necessary contact information regarding the persons in charge of this project. Furthermore, a web form is available as a supplementary means of communication using emails.

The screenshot shows the 'Contact' page of the S+T+ARTS Lighthouse MindSpaces website. The navigation bar includes links for HOME, PROJECT, PARTNERS, OUTCOMES, NEWS, and CONTACT (highlighted). The page is divided into two main sections. On the left, under the heading 'Contact Information', there are two contact entries. The first entry is for Dr. Stefanos Vrochidis (Project Coordinator), with email: stefanos@iti.gr, Phone: +30 2311 257754, and Fax: +30 2310 474128. The second entry is for Dr. Sotiris Diplaris, with email: diplaris@iti.gr, Phone: +30 2311257778, and Fax: +30 2310474128. Below these entries is the address: Centre for Research & Technology Hellas, Information Technologies Institute, 6th km Charilaou - Thessaloniki, 57001, Thessaloniki, P.O. Box: 60361, Greece. On the right, there is a contact form with fields for 'Your Name (required)', 'Your Email (required)', 'Subject', and 'Your Message'. A 'SEND' button is located at the bottom right of the form.

Figure 8: “Contact” webpage

2.1.4 Conclusions

The project website will help MindSpaces to keep in contact with the surrounding research, user, artists and creative/VR industrial community. Its success will very much depend on the quality of the content and that it is constantly updated. It is therefore necessary to continuously provide status updates on the project’s progress but also news and current topics discussed in the community. In addition the website will function as a platform for announcing the open call.

Even though it will be only one of the several tools to inform people about MindSpaces, the website will play a very important role in disseminating the project’s news.

2.2 Communication kit

A project “communication kit” including: a) a leaflet (**Figure 9**), b) a poster (**Figure 10**) and c) an overview presentation (**Figure 11**) has been designed. This will aid dissemination activities and ensure a consistent communication of the project concept, objectives and results. This material will be distributed to all public events (conferences, workshops, exhibitions, etc.), where MindSpaces partners participate.

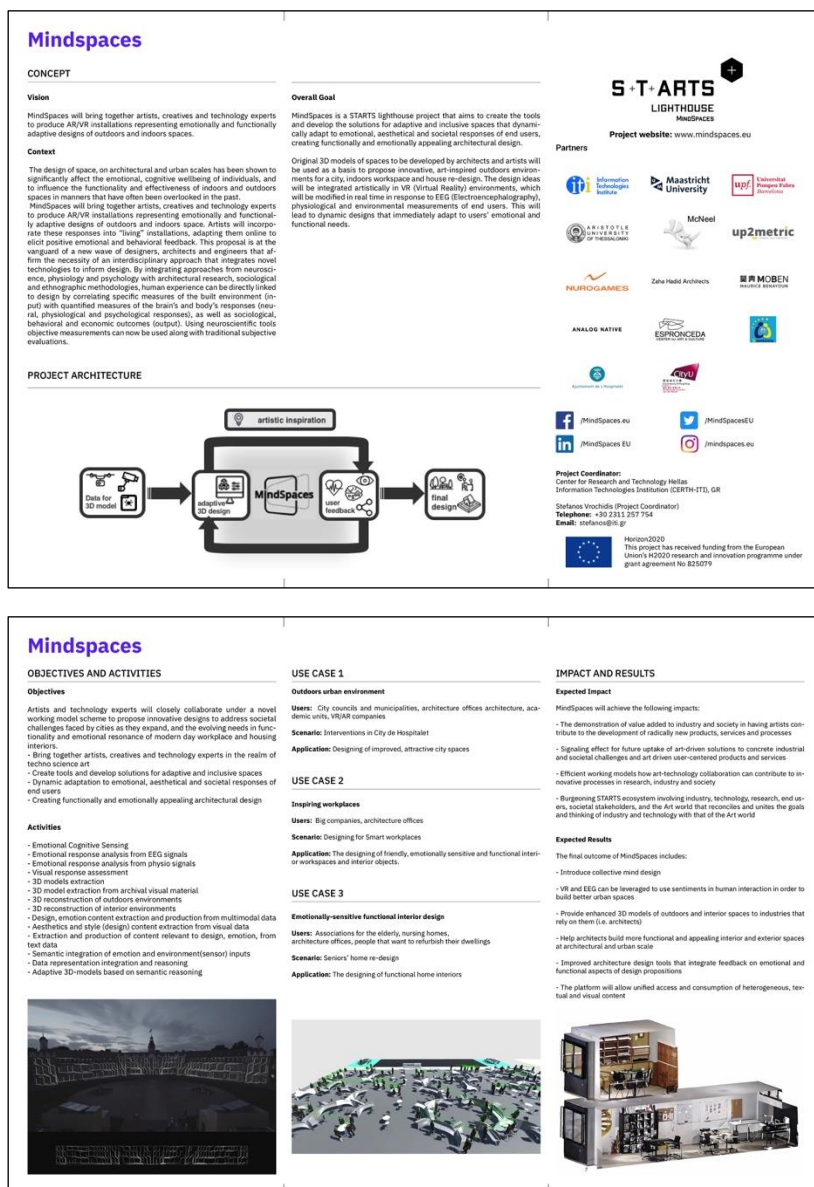


Figure 9: MindSpaces leaflet

Mindspaces Art-driven adaptive outdoors and indoors design



Vision

MindSpaces will bring together artists, creatives and technology experts to produce AR/VR installations representing emotionally and functionally adaptive designs of outdoors and indoors spaces.

Context

The design of space, on architectural and urban scales has been shown to significantly affect the emotional, cognitive wellbeing of individuals, and to influence the functionality and effectiveness of indoors and outdoors spaces in manners that have often been overlooked in the past.

MindSpaces will bring together artists, creatives and technology experts to produce AR/VR installations representing emotionally and functionally adaptive designs of outdoors and indoors space. Artists will incorporate these responses into "living" installations, adapting them online to elicit positive emotional and behavioral feedback. This proposal is at the vanguard of a new wave of designers, architects and engineers that affirm the necessity of an interdisciplinary approach that integrates novel technologies to inform design. By integrating approaches from neuroscience, physiology and psychology with architectural research, sociological and ethnographic methodologies, human experience can be directly linked to design by correlating specific measures of the built environment (input) with quantified measures of the brain's and body's responses (neural, physiological and psychological responses), as well as sociological, behavioral and economic outcomes (output). Using neuroscientific tools objective measurements can now be used along with traditional subjective evaluations.

Objectives

- Bring together artists, creatives and technology experts in the realm of technology art
- Create tools and develop solutions for adaptive and inclusive spaces
- Dynamic adaptation to emotional, aesthetic and societal responses of end users
- Creating functionally and emotionally appealing architectural design

Expected results

The final outcome of MindSpaces includes:

- Introduce collective mind design
- VR and EEG can be leveraged to use sentiments in human interaction in order to build better urban spaces
- Provide enhanced 3D models of outdoors and interior spaces to industries that rely on them (i.e. architects)
- Help architects build more functional and appealing interior and exterior spaces at architectural and urban scale
- Improved architecture design tools that integrate feedback on emotional and functional aspects of design propositions.
- The platform will allow unified access and consumption of heterogeneous, textual and visual content.

Use Cases

MindSpaces will validate the developed technologies through three use cases. The first one applies on outdoors urban environment, assisting architects, designers and artists to design an urban area of special cultural interest or an interactive art installation.

The second use case will assist architecture offices in the design process of friendly, emotionally sensitive and functional interior workspaces and interior objects. The third use case relates to the design of emotionally-sensitive functional interior spaces for the elderly.

Use Case 1: Outdoors urban environment

Users: City councils and municipalities, architecture offices architecture, academic units, VR/AR companies

Scenario: Interventions in City de Hospitalet

Application: Designing of improved, attractive city spaces

Use Case 2: Inspiring workplaces

Users: Big companies, architecture offices

Scenario: Designing for Smart workplaces

Application: The designing of friendly, emotionally sensitive and functional interior workspaces and interior objects.

Use Case 3: Emotionally-sensitive functional interior design

Users: Associations for the elderly, nursing homes, architecture offices, people that want to refurbish their dwellings

Scenario: Seniors' home re-design

Application: The designing of functional home interiors



Contact Information

Dr. Stefanos Vrochidis
(Project Coordinator)
Phone: +30 2311 257 754
Email: stefanos@iti.gr

Dr. Sotiris Diplaris
(Technical Manager)
Phone: +30 2311 257 778
Email: diplaris@iti.gr



www.mindspaces.eu

Partners

14 partners , 7 countries



Figure 10: MindSpaces poster



Figure 11: MindSpaces overview presentation.

During the lifetime of the project, the flyer, the poster and the overview presentation will be constantly updated (at least twice). The first version will disseminate the objectives, the concept and the vision of MindSpaces. When project results, outcomes and findings become available, they will be included in a subsequent version.

More detailed views of the first version of flyer, poster and overview presentation are available in Appendices A.1, A.2 and A.3 respectively.

○ Factsheet

This short document will describe the project's outline, goals, key issues, technical approach, expected achievements and impact in a concise way. In addition, it will contain the organisational information such as list of participants, contact details, timelines and information on the European Commission funding.



Figure 12: MindSpaces factsheet

The factsheet (Figure 12) will be available and published both in an online version¹ and a printed version, when required for specific occasions. A more detailed view of the factsheet is available in Appendix A.4.

○ Press releases

Press releases will be issued once a year, as well as for all important milestones and events. They will target the local or national press of the partners entrusted with this task. The press releases will describe the goals of the project in a simple, jargon free language and whenever possible highlight the benefits for the region/country and the importance of the local partner being part of an EU consortium.

¹ http://MindSpaces.eu/wp-content/uploads/2018/03/MindSpaces_FactSheet_A4-1.pdf

○ Newsletters

MindSpaces partners will publish newsletters regularly to inform the other partners and the public of current activities, latest news and the progress of the project.

The newsletter released during the first three months of the project is depicted in **Figure 6**. The full version is accessible through the MindSpaces website.

3 TARGETED EVENTS AND VENUES

3.1 MindSpaces workshops

The MindSpaces consortium will organise a number of events during the project duration. These events are aimed at enhancing the project objectives, interaction with the users and receiving comments and suggestions from the users and improving the system as well as enlarging exploitation opportunities and impacts.

- **MindSpaces User Days**

User days organized in cooperation with the cities involved. First one: L'Hospitalet del Llobregat. A user day will be organized in Paris to demonstrate the first prototype of mindscapes in October 2020. The user workshop will take place early in the project (**M3**) in L'Hospitalet de Llobregat, Spain (led by **CdH**) to discuss the MindSpaces use cases and user requirements.

- **MindSpaces Open Days and Final Demonstration Workshop**

1st Open Day: The first Open Day will be held by **ESP** and **NURO** in Spain after the deployment of the 2nd prototype (**M31**) and will demonstrate MindSpaces progress in PUC1 Outdoors urban environments. This open day aim to test and evaluate MindSpaces in a real-life environment for further technical advancements and changes, and also demonstrate it in a broader audience consisting of academic and market representatives.

2nd Open Day: The **second** Open Day (**M36**) will be organized by **ZH** in UK so as to fully demonstrate MindSpaces to a broader group of potential customers, including architecture offices, video game companies, design industry leaders, governmental members, investors and societal organizations. This open day will demonstrate MindSpaces results in PUC2 – Inspiring workspaces. Final Demo - London, UK – venue tbc.

- **MindSpaces workshops, stands and demonstrations:**

1st Demonstration workshop: The first demonstration workshop will be realized by **eSeniors** in Paris after the deployment of the 1st prototype (**M22**) and its results will be integrated into the next development cycles. This workshop will demonstrate results from PUC3 – Emotionally-sensitive functional interior design. The workshop will have the following objectives: (i) to present the lessons learned in MindSpaces and illustrate its first results by demonstrations, (ii) to offer the interested parties the possibility to experiment with the MindSpaces workbench in “hands-on” sessions, (iii) to provide a user forum for networking with professionals from related areas, (iv) to obtain feedback from the participants, and (v) to create a detailed document on lessons learned for the development of the future prototypes. The target group will be broader than the UG.

2nd Demonstration workshop: The second demonstration workshop will take place in the **AUTH** campus after the 2nd prototype deployment (**M28**). The main goal of this workshop will be to train and present MindSpaces to a group of academic students from various

disciplines, create and fabricate a properly scaled prototype and/or other spatial proposals, physical or virtual, as outcomes of MindSpaces. The workshop will include training seminars, lectures, design studios and actual fabrication of the prototype. All partners will participate, providing feedback, training and expertise. The whole process will provide important feedback for the development of the tool and its usage by end users.

3.2 MindSpaces Dissemination Events

There are several dissemination actions planned for the immediate future. The list that follows highlights the most important events targeted by the consortium.

- **Event:** EGX Rezzed;
Date: 4th Apr – 6th Apr;
Location: London, UK;
Website: <https://www.egx.net/rezzed>;
Brief: All the great stuff from previous EGX events – hundreds of screens featuring the very best console and PC games weeks (or months) before they're released, presentations by world famous game designers and a feast of other game related features.
- **Event:** Thessaloniki Design Week;
Date: 04th May – 10th May;
Location: Thessaloniki, GR
Website: <https://thessalonikidesignweek.gr>;
Brief: The vision of Thessaloniki Design Week is to operate on many levels as a participatory platform for a wide range of institutions, entities, entrepreneurs, individuals, scientists and teams acting in the creative industry, as an opportunity to develop research and innovation and to produce new suggestions and ideas, products and services, as a tool of expression, education and professional development, but also extroversion of the city and its potential, connecting it to the corresponding institutions, entities, organisations, foundations and events abroad.
- **Event:** Venice Biennale 2019;
Date: 11 May - 24 Nov 19;
Location: Venice, Italy;
Website: <http://www.labiennale.org/en/art/2019/homepage-2019>;
Brief: The Venice Biennale has been for over 120 years one of the most prestigious cultural institutions in the world. Established in 1895, the Biennale has an attendance today of over 500,000 visitors at the Art Exhibition. 2019 sees the 58th edition of this international art exhibition.

- **Event:** CEBIT;
Date: 24th Jun – 28th Jun;
Location: Hanover, Germany;
Website: <https://www.cebit.de/>;
Brief: CEBIT is Europe's leading digital event. Business, leads, ideas. As a triple-punch event featuring exhibits, conferences and networking, CEBIT covers the digitisation of business, government and society from every angle.
- **Event:** Future of Branding Week;
Date: 24th Jun – 28th Jun;
Location: London, UK;
Website: <https://futurelondonacademy.co.uk/en/course/branding>;
Brief: From Sonic Branding to VR and AR – explore how leading brands are disrupting the industry using new channels and evolving technologies. Discover the most innovative approaches to brand strategy from the world-class creative and advertising agencies
- **Event:** Ux and Digital Design Week;
Date: 12th Aug – 16th Aug;
Location: London, UK;
Website: <https://futurelondonacademy.co.uk/en/course/ux-and-digital-design>;
Brief: Create experiences that people will fall in love with. Get inspiration for your current projects and advice on how to build a design team of your dreams. Find out the secrets of what makes products successful and what mistakes companies made when they were building new services.
- **Event:** Gamescom;
Date: 20th Aug – 24th Aug;
Location: Cologne, Germany;
Website: <http://www.gamescom.global/>;
Brief: Gamescom (stylized as gamescom) is a trade fair for video games held annually at the Koelnmesse in Cologne, North Rhine-Westphalia, Germany. Gamescom is used by many video game developers to exhibit upcoming games and game-related hardware.
- **Event:** 16th Istanbul Biennial;
Date: 14 Sep - 10 Nov 19;
Location: Istanbul, Turkey;
Website: <http://bienal.iksv.org/en>;
Brief: The most comprehensive international art exhibition organized both in Turkey and throughout the geographical sphere, the Istanbul Biennial plays an important role in the promotion of contemporary artists not only from Turkey but also from a number of different countries in the international arena. The Istanbul Biennial prefers an exhibition

model that enables a dialogue between artists and the audience through the work of the artists instead of a national representation model. A complementary educational program is provided both for students and viewers of art, while simultaneously translated panel discussions, conferences, and workshops are also organized within the scope of the exhibitions.

- **Event:** Chicago Architecture Biennial;
Date: 19 Sep 19 - 1 May 20;
Location: Chicago, USA;
Website: <http://chicagoarchitecturebiennial.org/>;
Brief: The Chicago Architecture Biennial creates new opportunities every two years for emerging talent in architecture, design, and the arts. Each edition, the Curatorial Team invites architects, artists and designers from around the world to present their work to engage a wide public and global audience.
- **Event:** Tallinn Architecture Biennale (TAB);
Date: 11 Sep 19 - 3 Nov 20;
Location: Tallinn, Estonia;
Website: <https://tab.ee/>;
Brief: **Tallinn Architecture Biennale (TAB)** is an international architecture and urban-planning festival with a diverse programme that promotes architectural culture. TAB encourages synergy between Estonian and foreign architects as well as between architects and the general public by way of creating contacts and exchanging ideas. TAB core programme consists of five main events – Curatorial Exhibition, Symposium and Tallinn Vision Competition that are all curated by TAB Head Curator, then International Architecture Schools' Exhibition and Installation Programme (IP). TAB main Programme is accompanied by a diverse Satellite Programme, that consists exhibitions, lectures, installations, architectural film programme and other events, all over Tallinn that are related to TAB. Tallinn Architecture Biennale is organised by the Estonian Centre for Architecture.

3.3 International and national events targeted

Based on the analysis presented in Section 1.1.1, MindSpaces targets diverse audience groups with different interests and needs, including end users, researchers, academics and developers. It was also mentioned that different target groups require a different approach by the MindSpaces consortium, meaning that the information that should be conveyed, as

well as the means used should take into consideration the background knowledge and the interests of the targeted group.

However, since at this stage of the project, there are no results or product that can be demonstrated, the dissemination objective is to present the MindSpaces concept, the objectives and the use cases addressed in relevant international and national events. Networking activities are also of importance, since they allow for direct interaction with potentially interested target groups and researchers working in the same areas.

MindSpaces will actively be on the lookout for high profile scientific/academic conferences and commercial events that are within the domain of interest of the project. On the one hand, the scientific/academic conferences that are of interest for the MindSpaces consortium are the ones that target the same research areas with MindSpaces research partners such as Emotional / cognitive sensing, visual analysis of behavioral patterns, 3D reconstruction, semantic representation and reasoning, text generation, etc. On the other hand, the commercial events that are of interest refer to art, architecture, design and cultural-related commercial conferences, fairs and exhibitions.

Given that the starting date of MindSpaces has been 1.1.2019, the Consortium will start to publish significant scientific outcomes of the project in 2020. Still, some scientific/academic conferences of the aforementioned research areas have already been targeted for 2019 and organised per WP or domain of research. These are

Scientific/Academic conferences

- **Sensor data collection (WP3)**
 - The Thirtieth IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR, June 16-21, 2019, Long Beach, CA, <http://cvpr2019.thecvf.com/>
 - ICCV : IEEE International Conference on Computer Vision
Oct 27, 2019 - Nov 3, 2019 - Seoul , South Korea, <http://iccv2019.thecvf.com/>
 - ACM Multimedia Conference (ACMMM-19), 21 - 25 October, 2019, Nice, France, <https://www.acmmm.org/2019/>
 - ACM International Conference on Multimedia Retrieval – ICMR 2019
June 10-13 2019, Ottawa, Canada, <http://www.icmr2019.org/call-for-papers/>
 - 15th International Conference on Artificial Intelligence Applications and Innovations, 24-26 May, 2019, Crete, Greece, <http://www.aiai2019.eu/>
 - 8th International Conference on Affective Computing & Intelligent Interaction (ACII 2019)<http://acii-conf.org/2019/>
- **MindSpaces adaptive environment development 2 (WP5)**
 - The 30th British Machine Vision Conference (BMVC), Cardiff, 2019.
 - International Conference on Image Processing (ICIP), 2020

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- ACM MM 2020
 - WACV 2020 : Workshop on Applications of Computer Vision
 - ACCV 2020 : Asian Conference on Computer Vision
 - AVSS 2019: IEEE International Conference on Advanced Video and Signal-based Surveillance (AVSS)
 - 42st International Engineering in Medicine and Biology Conference (EMBC 2020)
 - 18th International Semantic Web Conference (ISWC-18), 26 - 30 October, 2018, Auckland, New Zealand, <https://iswc2019.semanticweb.org>
 - 13th International Workshop on Semantic Evaluation (SemEval-19), June 6-7, 2019 in Minneapolis, USA, <http://alt.qcri.org/semeval2019/>
 - **MindSpaces deployment and evaluation (WP7)**
 - Simaud 2019, 7-9 April, Atlanta, US.
 - 2019 Annual conference of the North American Chapter on the Association for Computational Linguistics (NAACL), 2-7 June, Minneapolis, USA.
 - The Fifth International Conference on Dependency Linguistics (DepLing), August 2019, Paris, France.
 - The 57th Annual Meeting of the Association for Computational Linguistics (ACL), 28 July- 2 August 2019, Florence, Italy.
 - 17th International Conference on Content-Based Multimedia Indexing (CBMI), 4-6 September 2019, Dublin, Ireland.
 - Design Modelling Symposium 2019, 21—25 September, Berlin, Germany
 - 12th International Conference on Computer Vision Systems (ICVS), 23-25 September 2019, Thessaloniki, Greece.
 - IASS FORM vs FORCE, 7-10 October, Barcelona, Spain
 - MediaEval, Emotional Impact on Movies task, October 2019.
 - ACM Multimedia (ACM MM), October 2019, Nice, France
 - The 18th International Symposium on Mixed and Augmented Reality (ISMAR), Oct 2019 (a paper about semantics, 3D models and visual analysis technologies - WP4/WP5/WP6 is foreseen to be submitted on this conference)
 - The 30th British Machine Vision Conference (BMVC), Cardiff, 2019.
 - The International Conference in Computer Vision (ICCV), 27 October-3 November, 2019, Seoul, Korea.
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- 2019 Annual Conference on Empirical Methods in Natural Language Processing (EMNLP), 3-7 November. Hong Kong. 'Automation in construction' international journal, 2019
 - The 34th ACM/SIGAPP Symposium On Applied Computing (SAC), April 8th-12th 2019, Limassol, Cyprus.
 - 41th European Conference on Information Retrieval (ECIR), 14 – 18 April, 2019, Cologne, Germany
 - ACM CHI Conference on Human Factors in Computing Systems (CHI-19), 4 – 9 May, 2019, Glasgow, UK
 - THE WEB CONFERENCE 2019, WWW, San Francisco, May 13-17, 2019
 - 6th Extended Semantic Web Conference. Jun 2, 2019 - Jun 6, 2019, Portorož, Slovenia
 - 17th Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL HLT-19), 2 – 7 June, 2019, Minneapolis, USA
 - 9th International Conference on Web Intelligence, Mining and Semantics, Jun 26, 2019 - Jun 28, 2019, Seoul, South Korea
 - 42st International ACM SIGIR Conference on Research and Development in Information Retrieval (ACM SIGIR-2019), 21-25 July, 2019, Paris, France
 - The 57th Annual Meeting of the Association for Computational Linguistics (ACL), July 28th-August 2nd 2019, Florence, Italy.
 - 4th Conference on Machine Translation (WMT-19), 1 – 2 August, 2019, Florence, Italy
 - 28th International Joint Conference on Artificial Intelligence (IJCAI-19), 10 - 16 August, 2019, Macao, China
 - The Fifth International Conference on Dependency Linguistics (DepLing), August 2019, Paris, France.
 - Semantics 2019, 9th - 12th of September 2019 in Karlsruhe
 - Interspeech 2019, 15 - 19 September, 2019, in Graz, Austria
 - 13th ACM Conference on Recommender Systems (RecSys-19), 16 - 19 September, 2019, Copenhagen, Denmark
 - 18th International Semantic Web Conference, October 26 – 30, 2019, The University of Auckland, New Zealand
 - 2019 Annual Conference on Empirical Methods in Natural Language Processing (EMNLP), November 3rd-7th. Hong Kong.
 - The 12th International Conference in Natural Language Generation. End of 2019, place to be defined
 - Human Brain Mapping (annual)
 - Society for Neuroscience (annual)
 - International Neuropsychology Symposium (annual)
 - Vision Society (annual)
-

- IEEE 3D Vision, IEEE Computer Society CVPR, ICCV, ECCV, ISPRS Journal of Photogrammetry and Remote Sensing, Elsevier Letters on Pattern Recognition, Elsevier_Image_Communication, IET Computer Vision, IEEE_Remote_sensing, Elsevier_IMAVIS, MDPI_Remote_Sensing, ISPRS Congress, MDPI Sensors, MDPI_ISPRS_International_Journal_of_GeoInformation
- eCAADe, Acadia, CAAD futures, CAADRIA, SiGradi, AAG, Smart Geometry
- AAL Conference 2019 in Aarhus, Semaine Bleu organized in October each year with events on healthy and active ageing organized in the city of Paris
- Smart Cities Meeting (in Sharing Cities Summit), Mobile World Congress, Brainvitge Program from the Institute of Biomedical Research of Bellvitge Hospital.
- SEMANTiCS conference <https://2019.semantics.cc/>
Extended Semantic Web Conference <https://2019.eswc-conferences.org/>
International Conference on Web Intelligence <https://webintelligence2019.com/>

Media, architecture, design and cultural-related commercial conferences, fairs and exhibitions

- Rhino user meeting in Europe
- Marine Design & Engineering Meeting, Barcelona, May 2019
- Barcelona Design Week, June 2020
- Festival de la Ciència – Barcelona, 2020
- Gamescom, Digility, Mobile world congress, smartcity expo
- WAF, Salone del Mobile, Venice Biennale, Architecture of the Future
- Art Fairs: ARCO, ART BASEL. Art events: VENICE BIENNALE, MANIFESTA. Art /Tech events:SONAR D+, ARS ELECTRONICA, LAST Festival.
- Understanding Design Festival, Sonar Music Festival, Open House Barcelona, CREA Cultural District Festival

3.4 Presentations and publications

Project results are planned to be published through articles mainly in specialised press, scientific journals (Table 3) and in relevant national and international conferences and workshops (as described above).

Table 3: Topic and relevant journals

Topic and related WPs	Relevant Journals
Definition of societal design needs (WP2)	Speech and Language Processing Computational Linguistics Natural Language Engineering Journal Computer Speech and Language Language Resources and Evaluation Web Semantics Semantic Web
Sensor Data Collection (WP3)	IEEE Transactions in Image Processing IEEE Transactions on Multimedia IEEE Transactions on Pattern Analysis and Machine Intelligence IEEE Transactions on Affective Computing Expert Systems with Applications Multimedia Tools & Applications
Analysis of emotional, cognitive and environmental sensing (WP4)	Speech and Language Processing Computational Linguistics Natural Language Engineering Journal Computer Speech and Language Language Resources and Evaluation Web Semantics Semantic Web
MindSpaces adaptive environment development (WP5)	IEEE Transactions on Image Processing IEEE Transactions on Circuits and Systems for Video Technology Pattern Recognition Pattern Recognition Letters

	<p>IEEE Transactions on Multimedia</p> <p>Computer Vision and Image Understanding</p> <p>IEEE Transactions on Biomedical Engineering</p> <p>IEEE Transactions on Instrumentation and Measurement</p> <p>Speech and Language Processing</p> <p>Computational Linguistics</p> <p>Natural Language Engineering Journal</p> <p>Computer Speech and Language</p> <p>Language Resources and Evaluation</p> <p>Web Semantics</p> <p>Semantic Web</p> <p>Expert systems</p> <p>https://onlinelibrary.wiley.com/journal/14680394</p>
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As for the attendance to conferences, the partners will keep a critical eye on their quality and try to make a qualified selection of appropriate conferences to apply for.

3.5 Calendar of events

Year 1											
Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
	Mobile world congress						Games com	Digility			

4 LIAISON AND DISSEMINATION COMMUNITIES

4.1 MindSpaces User Group (UG)

The MindSpaces UG will be created by recruiting relevant stakeholders from the creative industry field with an explicit interest in following the progress of the project. Existing contacts from EU funded projects, the academic and scientific community, the industry and business-related community will be also involved in order to attract members.

The objective of the UG is to setup partnerships that are mutually beneficial; after specific agreements (initially Non-Disclosure Agreements (NDA) will be signed) it will be possible for them:

- to participate in the evaluation of the project results
- to test the project software and provide feedback
- to establish synergies for the possible exploitation of the project results, the development of business models, partnerships etc.,
- to participate in the technical discussions and activities (special sessions, standardisation, etc.)
- to contribute with ideas or requirements that may fit the project objectives.

MindSpaces partners who have proximity to users that fall into the aforementioned groups will contact them in order to present MindSpaces and invite them to the UG. The most important activities will be setup by the user partners of MindSpaces who will conduct the following activities:

- User Group (UG): The UG will include representatives of all key stakeholders including artists, architects, film makers, wider design communities, culture and creative industries, city councils, municipalities, community groups and other potential customers and/or final users of MindSpaces. UG participants will be informed on project developments and will be invited to participate in MindSpaces discussions and events (e.g. plenary meetings, workshops, open days) and provide their feedback through concise and short questionnaires or templates. T8.2 will be responsible for communication with the UG, while an informed consent form to be included in the UG will be publicly provided on the project website – T8.1
- AUTH will disseminate our activity in the academic community (students, professors and teaching staff). AUTH will target architecture firms acknowledged for their work in the fields related to MindSpaces.
- McNeel will reach out to professionals, practitioners and members of Rhino3D and GrassHopper's user communities, with practices relevant to the applications and use

cases defined in the project. McNeel will also participate in recruiting users and early adopters of the tools that are envisioned in the project.

- NURO will promote the existence and benefits of MindSpaces by contacting relevant contacts in the gaming industry as well as creative media stakeholders. NURO disseminates activities to relevant parties by one-to-one emails and meetings during various events.
- MU will disseminate our activity in the academic community (students, professors and teaching staff). MU will target user groups and patients acknowledged for their work in the fields related to MindSpaces.
- E-Seniors will promote the MindSpaces project on its website and on its social networks. In addition, since our target audience is senior, we will go to events, forums and conferences where this population can be reached by the project.

The User Group is in the first stages of being formed. Potential User Group Partners are being collected and listed so they can be contacted with the offer to become part of the User Group in the following months. Since the MindSpaces project is still in its early stages and has had no tangible output yet, it was elected to wait with assembling a user group until there is a demo or some other output to show to get potential partners interested in the MindSpaces project and platform. Here is a potential list of users that will be contacted in the following months.

Table 4: MindSpaces User Group members

a/a	Company/ Centre/ Institution	Expertise	Contact Point	Country
1	Acute art	Virtual Reality & Augmented Reality Art Production	Mr. Daniel Birnbaum	UK
2	Labs4Reality/Pol ytechnic University of Catalonia	AR/VR	Isidro Navarro	Spain
3	MIT Media Lab/City science group	Big data analysis, urban planning, architectural robotics, building design and	Mr. Luis Alonso	USA

a/a	Company/ Centre/ Institution	Expertise	Contact Point	Country
		construction, (free-form transparent energy efficient envelopes and biomedical uses), eco-innovation, e-learning and its impact on social networks, new technologies, IoT		
4	BRAINVITGE /Institute of Biomedical Research of Bellvitge Hospital	Research on brain mechanisms of communication and learning	Prof. Josep Marco Pallarés	Spain

4.2 Standardisation bodies

MindSpaces will be instrumental in both the implementation of existing standards as well as the creation of new standard recommendations. Below is a planning of the actions towards standardisation (Table 9). The plan at each plenary is to make a session on standard to update the table.

Table 9: MindSpaces standardisation actions

Standard body	Responsible	Initial Action/timing	Definition of potential standard contribution/ timing
Universal Dependencies	UPF	Organization of a Shared Task that makes use of semantic dependencies (ends in November 2019)	Development and promotion new semantic annotations aligned with UD syntactic standards.

5 MEASURABLE DISSEMINATION GOALS

In order to quantify and evaluate the dissemination actions, MindSpaces have already set specific measurable goals with respect to the aforementioned planned activities. Specifically, the following figures are set as minimum expected dissemination targets:

Tool	Metric	Target
MindSpaces website	Number of <ul style="list-style-type: none"> • site visits per week • downloads per week • track download numbers from McNeel website 	<ul style="list-style-type: none"> • Measurement: Google Analytics; 25% increase of site visits per year is expected.
MindSpaces Final Demonstration Workshop	Number of <ul style="list-style-type: none"> • participants (by target group) 	<ul style="list-style-type: none"> • Target: 200 participants
Social Media	Number of <ul style="list-style-type: none"> • groups joined • active discussion forums • views (Facebook, LinkedIn) • tags and followers (Twitter) 	<ul style="list-style-type: none"> • Target: 2 groups, 2 discussion forums (on Facebook, Twitter and LinkedIn, Instagram), 1000 views, 500 tags and followers
Publications	Number of <ul style="list-style-type: none"> • publications in technical, scientific and academic conferences and journals 	<ul style="list-style-type: none"> • Target: at least 20 publications
User Group	<ul style="list-style-type: none"> • Number of users • Diversification 	<ul style="list-style-type: none"> • At least 20 users • At least 3 from each domain (semantics, language analysis, 3D reconstruction and video analysis, designers)

6 SUMMARY AND CONCLUSIONS

In this deliverable we summarised the dissemination principles and strategies, the dissemination plan and the dissemination material of MindSpaces and provided updates regarding the dissemination activities that were realised during the first three months of the project as well as the dissemination actions planned for the immediate future.

The project website will help MindSpaces to keep in contact with the surrounding research, artists, creatives and technology experts AR/VR industrial community. Its success will very much depend on the quality of the content and that it is constantly updated. It is therefore necessary to continuously provide status updates on the project's progress but also news and current topics discussed in the community.

Even though it will be only one of the several tools to inform people about MindSpaces, the website will play a very important role in disseminating the project's news.

A next version of this deliverable (D8.3) is expected on M18 and it will follow up the dissemination activities that mark the completion of the 18 months of the project. The dissemination activities for the 2nd year and the final dissemination report will be presented in D8.5 (M36).

A. APPENDIX

A.1 MindSpaces Flyer

MindSpaces flyer is a double sided three-folded A4 paper. Both sides of the flyer are illustrated below.

Mindspaces

CONCEPT

Vision

MindSpaces will bring together artists, creatives and technology experts to produce AR/VR installations representing emotionally and functionally adaptive designs of outdoors and indoors spaces.

Context

The design of space, on architectural and urban scales has been shown to significantly affect the emotional, cognitive wellbeing of individuals, and to influence the functionality and effectiveness of indoors and outdoors spaces in manners that have often been overlooked in the past. MindSpaces will bring together artists, creatives and technology experts to produce AR/VR installations representing emotionally and functionally adaptive designs of outdoors and indoors space. Artists will incorporate these responses into "living" installations, adapting them online to elicit positive emotional and behavioral feedback. This proposal is at the vanguard of a new wave of designers, architects and engineers that affirm the necessity of an interdisciplinary approach that integrates novel technologies to inform design. By integrating approaches from neuroscience, physiology and psychology with architectural research, sociological and ethnographic methodologies, human experience can be directly linked to design by correlating specific measures of the built environment (input) with quantified measures of the brain's and body's responses (neural, physiological and psychological responses), as well as sociological, behavioral and economic outcomes (output). Using neuroscientific tools objective measurements can now be used along with traditional subjective evaluations.

PROJECT ARCHITECTURE

Overall Goal

MindSpaces is a STARTS lighthouse project that aims to create the tools and develop the solutions for adaptive and inclusive spaces that dynamically adapt to emotional, aesthetical and societal responses of end users, creating functionally and emotionally appealing architectural design.

Original 3D models of spaces to be developed by architects and artists will be used as a basis to propose innovative, art-inspired outdoors environments for a city, indoors workspace and house re-design. The design ideas will be integrated artistically in VR (Virtual Reality) environments, which will be modified in real time in response to EEG (Electroencephalography), physiological and environmental measurements of end users. This will lead to dynamic designs that immediately adapt to users' emotional and functional needs.

S+T+ARTS Lighthouse MindSpaces

Project website: www.mindspaces.eu

Partners

/MindSpaces.eu
 /MindSpacesEU
 /mindspaces.eu

Project Coordinator:
Center for Research and Technology Hellas
Information Technologies Institution (CERTH-ITI), GR

Stefanos Vrochidis (Project Coordinator)
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Horizon2020
This project has received funding from the European Union's H2020 research and innovation programme under grant agreement No 825079

MindSpaces

OBJECTIVES AND ACTIVITIES

Objectives

Artists and technology experts will closely collaborate under a novel working model scheme to propose innovative designs to address societal challenges faced by cities as they expand, and the evolving needs in functionality and emotional resonance of modern day workplace and housing interiors.

- Bring together artists, creatives and technology experts in the realm of techno science art
- Create tools and develop solutions for adaptive and inclusive spaces
- Dynamic adaptation to emotional, aesthetical and societal responses of end users
- Creating functionally and emotionally appealing architectural design

Activities

- Emotional Cognitive Sensing
- Emotional response analysis from EEG signals
- Emotional response analysis from physio signals
- Visual response assessment
- 3D models extraction
- 3D model extraction from archival visual material
- 3D reconstruction of outdoors environments
- Design, emotion content extraction and production from multimodal data
- Aesthetics and style (design) content extraction from visual data
- Extraction and production of content relevant to design, emotion, from text data
- Semantic integration of emotion and environment(sensor) inputs
- Data representation integration and reasoning
- Adaptive 3D-models based on semantic reasoning



USE CASE 1

Outdoors urban environment

Users: City councils and municipalities, architecture offices architecture, academic units, VR/AR companies

Scenario: Interventions in City de Hospitalet

Application: Designing of improved, attractive city spaces

USE CASE 2

Inspiring workplaces

Users: Big companies, architecture offices

Scenario: Designing for Smart workplaces

Application: The designing of friendly, emotionally sensitive and functional interior workspaces and interior objects.

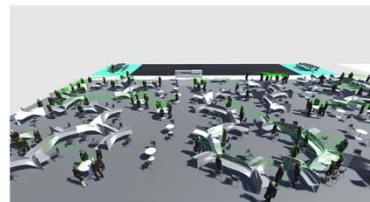
USE CASE 3

Emotionally-sensitive functional interior design

Users: Associations for the elderly, nursing homes, architecture offices, people that want to refurbish their dwellings

Scenario: Seniors' home re-design

Application: The designing of functional home interiors



IMPACT AND RESULTS

Expected Impact

MindSpaces will achieve the following impacts:

- The demonstration of value added to industry and society in having artists contribute to the development of radically new products, services and processes
- Signaling effect for future uptake of art-driven solutions to concrete industrial and societal challenges and art driven user-centered products and services
- Efficient working models how art-technology collaboration can contribute to innovative processes in research, industry and society
- Burgeoning STARTS ecosystem involving industry, technology, research, end users, societal stakeholders, and the Art world that reconciles and unites the goals and thinking of industry and technology with that of the Art world

Expected Results

The final outcome of MindSpaces includes:

- Introduce collective mind design
- VR and EEG can be leveraged to use sentiments in human interaction in order to build better urban spaces
- Provide enhanced 3D models of outdoors and interior spaces to industries that rely on them (i.e. architects)
- Help architects build more functional and appealing interior and exterior spaces at architectural and urban scale
- Improved architecture design tools that integrate feedback on emotional and functional aspects of design propositions
- The platform will allow unified access and consumption of heterogeneous, textual and visual content



A.2 MindSpaces Poster



Mindspaces

Art-driven adaptive outdoors and indoors design

Vision
MindSpaces will bring together artists, creatives and technology experts to produce AR/VR installations representing emotionally and functionally adaptive designs of outdoors and indoors spaces.

Context
The design of space, on architectural and urban scales has been shown to significantly affect the emotional, cognitive wellbeing of individuals, and to influence the functionality and effectiveness of indoors and outdoors spaces in manners that have often been overlooked in the past.
MindSpaces will bring together artists, creatives and technology experts to produce AR/VR installations representing emotionally and functionally adaptive designs of outdoors and indoors space. Artists will incorporate these responses into "living" installations, adapting them online to elicit positive emotional and behavioral feedback. This proposal is at the vanguard of a new wave of designers, architects and engineers that affirm the necessity of an interdisciplinary approach that integrates novel technologies to inform design. By integrating approaches from neuroscience, physiology and psychology with architectural research, sociological and ethnographic methodologies, human experience can be directly linked to design by correlating specific measures of the built environment (input) with quantified measures of the brain's and body's responses (neural, physiological and psychological responses), as well as sociological, behavioral and economic outcomes (output). Using neuroscientific tools objective measurements can now be used along with traditional subjective evaluations.

Objectives

- Bring together artists, creatives and technology experts in the realm of technology art
- Create tools and develop solutions for adaptive and inclusive spaces
- Dynamic adaptation to emotional, aesthetical and societal responses of end users
- Creating functionally and emotionally appealing architectural design

Expected results
The final outcome of MindSpaces includes:

- Introduce collective mind design
- VR and EEG can be leveraged to use sentiments in human interaction in order to build better urban spaces
- Provide enhanced 3D models of outdoors and interior spaces to industries that rely on them (i.e. architects)
- Help architects build more functional and appealing interior and exterior spaces at architectural and urban scale
- Improved architecture design tools that integrate feedback on emotional and functional aspects of design propositions.
- The platform will allow unified access and consumption of heterogeneous, textual and visual content.

Use Cases
Mindspaces will validate the developed technologies through three use cases. The first one applies on outdoors urban environment, assisting architects, designers and artists to design an urban area of special cultural interest or an interactive art installation.
The second use case will assist architecture offices in the design process of friendly, emotionally sensitive and functional interior workspaces and interior objects. The third use case relates to the design of emotionally-sensitive functional interior spaces for the elderly.

Use Case 1: Outdoors urban environment

Users: City councils and municipalities, architecture offices architecture, academic units, VR/AR companies
Scenario: Interventions in City de Hospitalet
Application: Designing of improved, attractive city spaces

Use Case 2: Inspiring workplaces

Users: Big companies, architecture offices
Scenario: Designing for Smart workplaces
Application: The designing of friendly, emotionally sensitive and functional interior workspaces and interior objects.

Use Case 3: Emotionally-sensitive functional interior design

Users: Associations for the elderly, nursing homes, architecture offices, people that want to refurbish their dwellings
Scenario: Seniors' home re-design
Application: The designing of functional home interiors



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www.mindspaces.eu

Partners 14 partners , 7 countries





























A.3 MindSpaces Overview Presentation



S+T+ARTS
LIGHTHOUSE
MINDSPACES

Art-driven, adaptive outdoors and indoors design

MindSpaces project presentation


Sotiris Diplaris (CERTH)




This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 825079

[Mindspaces Project Overview](#)

MindSpaces presentation



- General information
- MindSpaces and Design
- Concept
- Objectives and Activities
- Pilot use cases (PUC)
- System Architecture
- MindSpaces research (WPs)
- Work package interplay
- Evaluation
- Expected results
- Exploitation and dissemination



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 825079

[Mindspaces Project Overview](#)

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General information

- **Project Coordinator:** Centre for Research and Technology Hellas – Information Technologies Institution (CERTH-ITI), GR
- **Project website:** <http://www.mindspaces.eu>
- **Duration:** 01/01/2019 – 31/12/2021
- **Type of Action:** RIA
- **Total Cost:** € 4,182,624.95
- **EC Contribution:** € 3,999,499.95



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 825079

Mindspaces Project Overview

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Consortium Partners



Zaha Hadid Architects



ANALOG NATIVE



14 Partners
7 Countries




This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 825079


Mindspaces Project Overview

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MindSpaces and Design



- Modern day **urban and interior design** addresses an ever-changing set of needs that arise in expanding cities, in workplaces and homes requiring **new functionalities** and **emotionally-relevant aesthetics**.
- **Art** has the capacity to transcend established theoretical and conceptual frames and act in **cross-disciplinary** ways, as it provides space for what is called as “**lateral**” **thinking**, that is to address issues with an ‘out of the box’ approach.



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MindSpaces and Design



- **Vision**

MindSpaces will bring together artists, creatives and technology experts to produce AR/VR installations representing emotionally and functionally adaptive designs of outdoors and indoors spaces.

- **MindSpaces Goals**
 - bring together artists, creatives and technology experts in the realm of techno science art
 - create tools and develop solutions for adaptive and inclusive spaces
 - dynamic adaptation to emotional, aesthetical and societal responses of end users
 - creating functionally and emotionally appealing architectural design



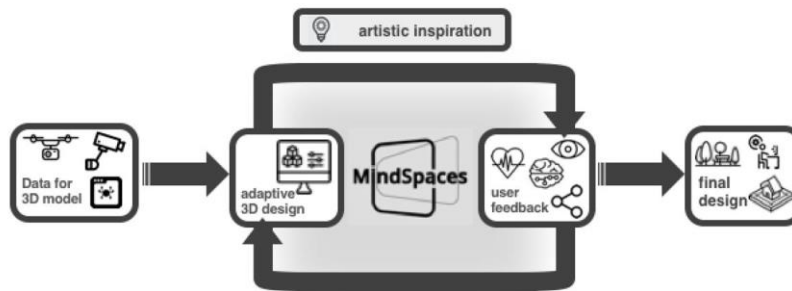
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MindSpaces concept

S+T+ARTS
LIGHTHOUSE
MindSpaces

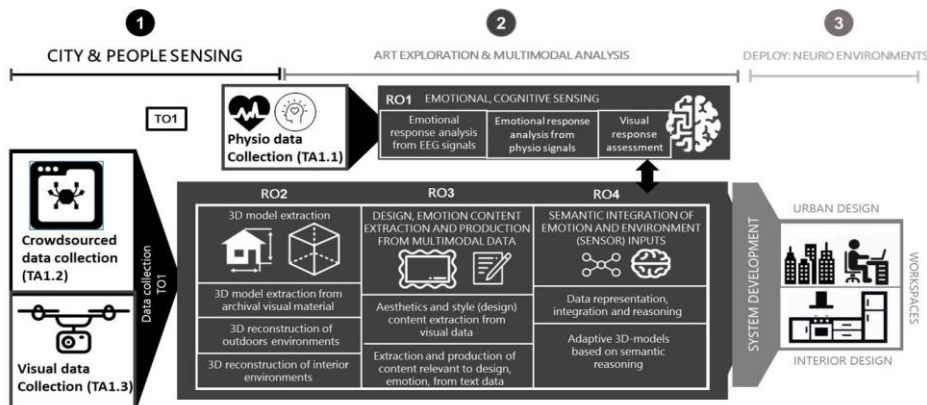


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MindSpaces Objectives and Activities

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LIGHTHOUSE
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Mindspaces Project Overview

Pilot Use Case 1

• PUC 1

Outdoors urban environment

- Support the design process of an urban area of special cultural interest (i.e. city square, old market, riverside, etc.).
- showcase its cultural importance
- generate new types of social interaction
- draw attention to issues it is facing regarding environmental pollution and mobility
- interactive art installations
- adaptive environment based on combination of sensors feedback and their interpretation by the artist



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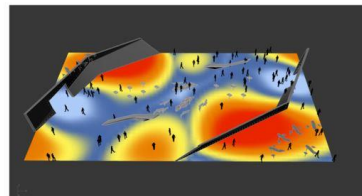
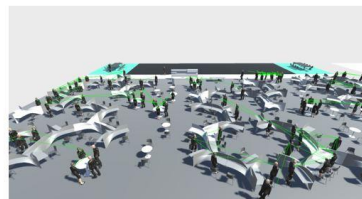
9

Pilot Use Case 2

• PUC 2

Inspiring workplaces

- generate improved workplace designs
- increase opportunities for positive social interaction in work environments
- allow for more dynamic and diverse social behavior
- synergy of artists and creatives with architects
- propositions are presented to end users
- sensor feedback analysis to modify environment and make it more appealing



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Pilot Use Case 3

• PUC 3

Emotionally-sensitive functional interior design

- Scenario: Senior's home redesign
- Artists and architects to design objects and spaces evoking positive experiences and memories
- Sensor feedback from elderly used to aesthetically evaluate the design



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MindSpaces work packages

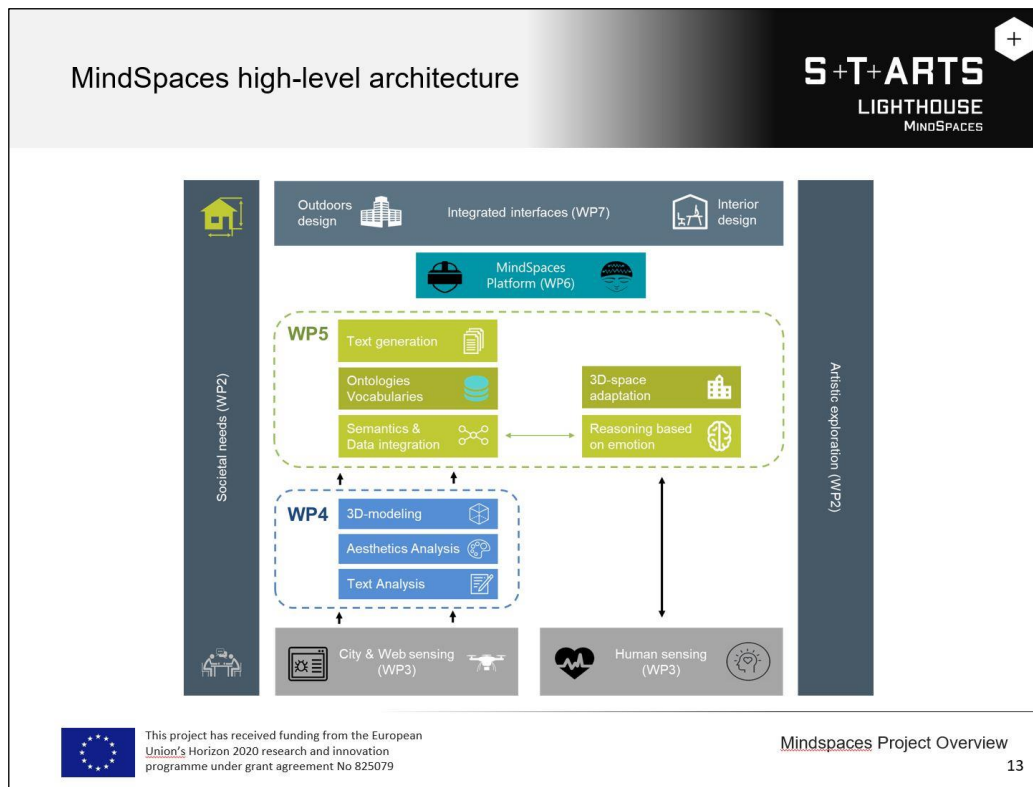
WP no	WP title	Lead	Start month	End month
1	Project management and coordination	CERTH	1	36
2	Definition of societal design needs	ESP	1	36
3	Sensor data collection	CERTH	3	32
4	Analysis of emotional, cognitive and environmental sensing	U2M	3	33
5	MindSpaces adaptive environment development	MU	3	34
6	MindSpaces platform development and integration	NURO	1	34
7	MindSpaces deployment and evaluation	AUTH	4	36
8	Dissemination and Exploitation	ZH	1	36
9	Ethics requirements	CERTH	1	36



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Mindspaces Project Overview

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Understanding Societal Design needs

- **WP2. Social and emotional benefits from the Arts**
 - Connections between Art and emotion
 - How can Art induce social benefits
- **WP2. Ethical framework**
 - Sensor data collection
 - Consider ethical aspects of using the Arts for affecting emotions and behavioral change
- **WP2. User requirements for design and modeling in urban scales**
 - Define use cases scenarios and requirements
 - How can VR/AR technology provide artistically challenging solutions

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Mindspaces Project Overview 14


MindSpaces Research & Development



- **WP3. Emotional and cognitive sensing**
 - Emotional response analysis from EEG signals
 - Emotional response analysis from physiological signals
 - Crowd analysis for visual response assessment

- **WP3. Multimedia data crawling and collection for reuse and repurpose**
 - Web and social media crawling/retrieval of textual and multimedia data
 - Artwork data collection

- **WP3/4. 3D model extraction and reconstruction**
 - 3D model extraction from archive visual material
 - 3D reconstruction of outdoor environments
 - 3D reconstruction of interior environments




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MindSpaces Research & Development



- **WP4/5. Design, emotion content extraction from multimodal data**
 - Aesthetic concept & style extraction from visual content
 - Extraction and production of design-relevant content from textual data
 - Emotion extraction from EEG signals
 - Human behavioral analysis from visual signals

- **WP5. Semantic integration of emotion and environment inputs**
 - Data representation, integration and reasoning
 - Adaptive 3D-models based on semantic reasoning

- **WP6. Tool development**
 - Development of AR/VR application for creatives/designers
 - Tool for architecture design
 - MindSpaces web platform

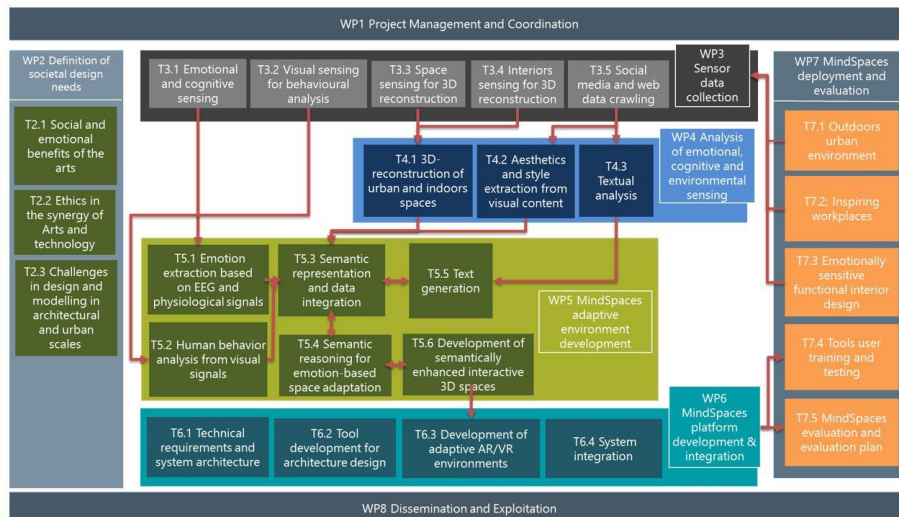


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MindSpaces Workpackage interplay



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Mindspaces Project Overview

MindSpaces System Development

- **Operational Prototype (M12)**
 - Integrating skeleton of the services
- **1st Prototype (M18)**
 - Integrating basic versions of the services
- **2nd Prototype (M26)**
 - Integrating advanced versions of the services
- **Final system (M34)**
 - Integrating the final services



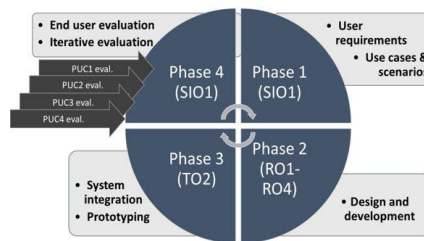
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Evaluation

- **Prototype (M20, M28) and final system evaluation (M36)**
 - User-oriented evaluation
 - by end users
 - using multisensory measurements
 - System-centric evaluation
 - Using objective metrics and indicators
- **Iterative development process to re-define user and technical requirements**
- **Evaluate the system based on the predefined PUCs**



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Mindspaces Project Overview

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Dissemination, Exploitation and Open Calls

- **Dissemination of results**
 - MindSpaces user and open door days
 - Organisation/participation in workshops and exhibitions
 - Demonstration of results in industrial partners and public service organisations
 - Publication to scientific conferences and journals
- **Exploitation of results**
 - Creation of open source versions of modules/tools
 - Modules to be exploited by the industrial partners (especially SMEs)
 - Business plan to exploit the final system
- **Open calls to Artists**
 - Artists residencies
 - Art-driven efforts to address societal needs relevant to MindSpace use cases



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Mindspaces Project Overview

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MindSpaces information

S+T+ARTS
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MindSpaces

For further information visit:

www.mindspaces.eu

Facebook: [/MindSpaces.eu](https://www.facebook.com/MindSpaces.eu)

LinkedIn: [/MindSpaces EU](https://www.linkedin.com/company/MindSpacesEU)

Twitter: [/MindSpacesEU](https://twitter.com/MindSpacesEU)

Instagram: [/mindspaces.eu](https://www.instagram.com/mindspaces.eu)

Thank you





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[MindSpaces Project Overview](#)
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A.4 MindSpaces Factsheet



Mindspaces

Art-driven adaptive outdoors and indoors design

Project Coordinator:

Center for Research and Technology
Hellas – Information Technologies
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Dr. Sotiris Diplaris
(Technical Manager)
Phone: +30 2311257778
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Project website:

<http://www.mindspaces.eu/>

Duration: 01/01/2019 – 31/12/2021

Type of Action: RIA

Total Cost: € 4,182,624.95

EC Contribution: € 3,999,499.95

Objectives

- Bring together artists, creatives and technology experts in the realm of techno science art
- Create tools and develop solutions for adaptive and inclusive spaces
- Dynamic adaptation to emotional, aesthetical and societal responses of end users
- Creating functionally and emotionally appealing architectural design

Use Cases

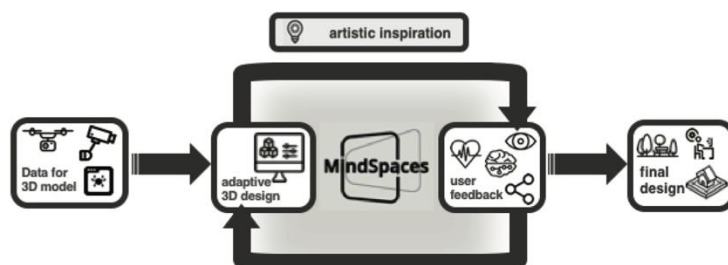
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Expected results

The final outcome of MindSpaces includes:

- Introduce collective mind design
- VR and EEG can be leveraged to use sentiments in human interaction in order to build better urban spaces
- Provide enhanced 3D models of outdoors and interior spaces to industries that rely on them (i.e. architects)
- Help architects build more functional and appealing interior and exterior spaces at architectural and urban scale
- Improved architecture design tools that integrate feedback on emotional and functional aspects of design propositions.
- The platform will allow unified access and consumption of heterogeneous, textual and visual content.



Partners



Zaha Hadid Architects



ANALOG NATIVE



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