

# ADMAIORA

**Grant Agreement number:** 814413

**Project acronym:** ADMAIORA

**Project title:** ADvanced nanocomposite MAterIals fOr in situ treatment and ultRASound-mediated management of osteoarthritis

**Funding scheme:** H2020-NMBP-TR-IND-2018-2020

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## D7.1 Project website

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Deliverable authors: Leonardo Ricotti, Michele Nardini, Lorenzo Vannozzi, Denise Amram

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| Project funded by the European Commission within the Horizon 2020 Programme |  |          |
|---|--|----------|
| Dissemination Level   |  |          |
| <b>PU</b>   | Public   | <b>X</b> |
| <b>PP</b>   | Restricted to other programme participants (including the Commission Service)        |          |
| <b>RE</b>   | Restricted to a group specified by the consortium (including the Commission Service) |          |
| <b>CO</b>   | Confidential, only for members of the consortium (including the Commission Service)  |          |

## Document History

| Version | Date       | Author                    | Summary of Main Changes  |
|---------|------------|---------------------------|--|
| 1       | 20/02/2019 | Leonardo Ricotti,<br>SSSA | First version of the deliverable template and indications              |
| 2       | 20/03/2019 | Leonardo Ricotti,<br>SSSA | First complete draft of the deliverable, with integrations requests    |
| 3       | 20/03/2019 | Leonardo Ricotti,<br>SSSA | Evolved draft of the deliverable, with small integrations needed       |
| 4       | 29/03/2019 | Leonardo Ricotti,<br>SSSA | Complete draft of the document, sent to the partners for a final check |
| 5       | 30/03/2019 | Leonardo Ricotti,<br>SSSA | Final document version   |

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## 1 Executive summary

The deliverable 7.1 includes complete information about the Web page of the ADMAIORA project. It has been developed with the aim to pursue effective Project dissemination and communication activities.

The ADMAIORA Web pages are available online at the address <http://www.admaiora-project.com>. The website is organised in different sections: "Home", "Project", "Consortium", "Results", "News & Media", "Events" and "Contact us".

The Website will be not used as a management tool (actually no private areas have been included): indeed, the Consortium decided to rely on different tools (more flexible ones) for project management. Thus, the Website is exploited as a platform to maximise the dissemination and communication potential of the Consortium and is part of ADMAIORA comprehensive communication strategy. The website is in fact directly linked to social network profiles and the ADMAIORA dedicated Communication Manager will hold these platforms and continuously update them.

In particular, the "News & Media" section constitutes the main means to give continuous visibility to the Project Website (and thus to the project activities too), since it highlights not only the ADMAIORA technical activities, but also the European and global topic events and news that are of general interest for ADMAIORA stakeholders, along the whole value chain. This section is directly connected to the ADMAIORA Facebook and Twitter profiles and, together with them, is part of the dynamic project communication strategy.

## 2 Website of the ADMAIORA project

### 2.1 Domains and website template

The web page of the ADMAIORA Project ([www.admaiora-project.com](http://www.admaiora-project.com)) is online. This is the main domain that has been acquired. In addition, the following domains have been also purchased:

- admaiora-project.net
- admaiora-project.org
- admaiora-project.eu
- admaioraproject.net
- admaioraproject.eu
- admaioraproject.org

All such additional domains re-address to the main one.

Following a detailed analysis and based on previous SSSA experience concerning the maximisation of visibility of EU-funded collaborative projects, a specific website template has been purchased: Codeus — Multi-Purpose Responsive Wordpress Theme (<https://themeforest.net/item/codeus-multipurpose-responsive-wordpress-theme/6906054>).

The home page is shown in Figure 1.

According to the EU policy, *“the EU emblem and reference to EU funding must be displayed in a way that is easily visible for the public and with sufficient prominence”*. In our case, the emblem is well visible both at the top (together with the project logo) and the bottom of the page. The sentence to acknowledge the EU funding and to evidence the Grant Number is shown at the bottom of the page in a well-visible position. The EU emblem and EU funding information appears in all the website pages, thus to guarantee an appropriate visibility.

Figure 2 and Figure 3 show the other two images and the corresponding short sentences (in blue) that currently populate the Home page slideshow. These images will be updated/substituted in the project course, once new catching ones will be produced.

Below the main Home page pictures, four circular clickable images, are reported. They are used to give visibility to four sections: “Summary & Figures”, “Objectives”, “People” and “Media & News”. Clicking on that pictures, the user is re-addressed to such sections.

At the centre of the page, the logos of the project partners are reported. They are in background, grey coloured, but when the mouse pointer is placed on one of them, the black&white version turns into a coloured one. All logos are clickable and they re-address to the partner description, in the “Consortium” section.



Figure 1: Current screenshot of the ADMAIORA website Home page.

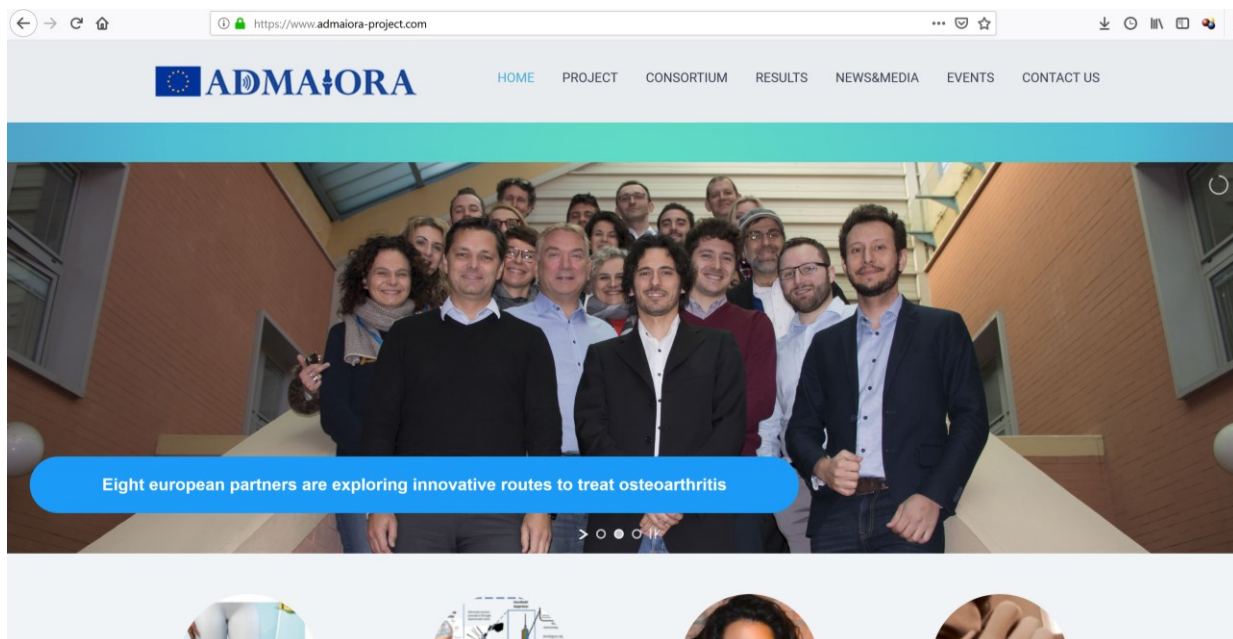


Figure 2: Current second image and short sentence (in blue) used for the Home page slideshow (part of the page).

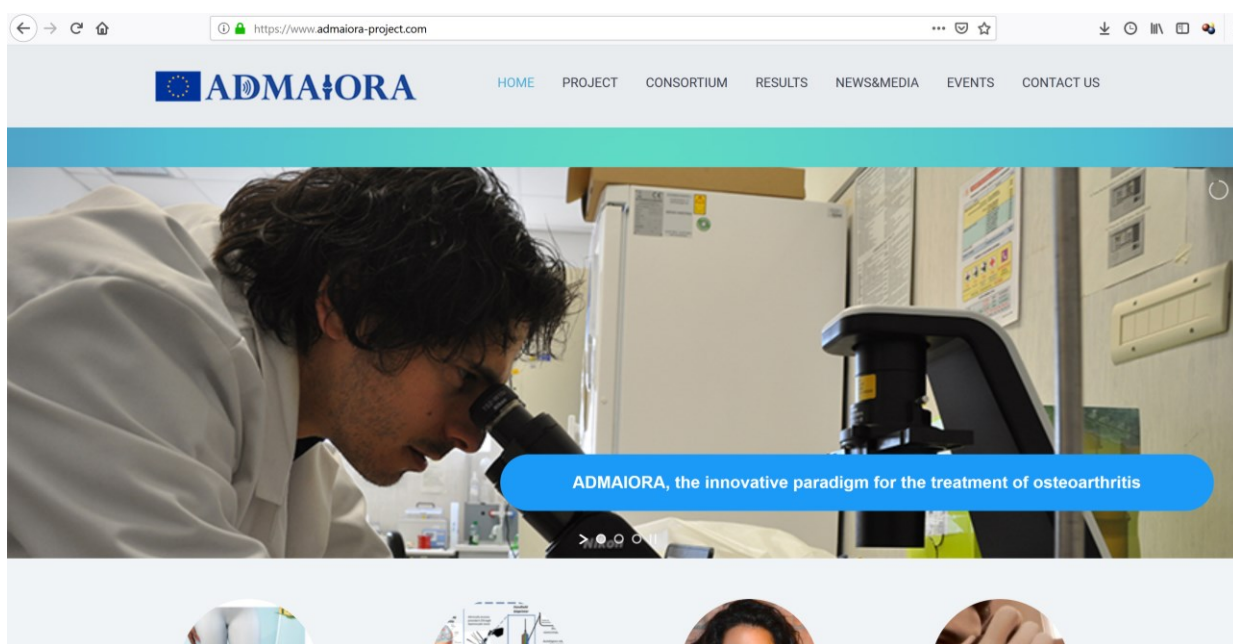


Figure 3: Current third image and short sentence (in blue) used for the Home page slideshow (part of the page).



## 2.2 Website structure

The structure of the ADMAIORA website is reported below:


| Section | Brief description  | Sub-section                            | Brief description  |
|---------|--|--|--|
| HOME    | Slideshow of representative project images, key information and quick links to the main sections (with rounded, eye-catching images)   | -                                      | -  |
| PROJECT | Description of the project context and objectives, of the key people involved, of the project organization in terms of management and boards and links to downloadable materials | <i>SUMMARY AND FIGURES</i>             | Short summary of the main project information, of the clinical problem addressed and of the project target impact (Figure 4)                                   |
|         |  | <i>OBJECTIVES</i>                      | Short summary of the main project objectives, extracted from the DoA (no confidential information are reported) (Figure 5)                                     |
|         |  | <i>PEOPLE</i>                          | Graphically catching list of partners and of key people involved in the project (with clickable links re-addressing to the Consortium sub-sections) (Figure 6) |
|         |  | <i>MANAGEMENT STRUCTURE AND BOARDS</i> | Short description of the project management structure and boards (Figure 7)  |
|         |  | <i>DOWNLOAD</i>                        | Project-related files that can be download by the user, for dissemination purposes (e.g., logo, leaflet, brochure, poster,                                     |





|            |   |                                    |  |
|------------|---|------------------------------------|--|
|            |   |                                    | public presentations, etc.)  |
| CONSORTIUM | Description of the Consortium as a whole and of the single partners involved in the project | <i>ABOUT THE CONSORTIUM</i>        | Short summary of the partners, their geographical distribution and the nature of the different organisations involved (Figure 8) |
|            |   | <i>THE BIOROBOTICS INSTITUTE</i>   | Short description of the BioRobotics Institute of the Scuola Superiore Sant'Anna (University -Italy)                             |
|            |   | <i>ISTITUTO ORTOPEDICO RIZZOLI</i> | Short description of the Istituto Ortopedico Rizzoli (Scientific research hospital - Italy)                                      |
|            |   | <i>BAR-ILAN UNIVERSITY</i>         | Short description of the Bar-Ilan University (University - Israel)   |
|            |   | <i>PLASMACHEM GMBH</i>             | Short description of PlasmaChem GmbH (Company - Germany)   |
|            |   | <i>IMAGE GUIDED THERAPY</i>        | Short description of Image Guided Therapy (Company - France)   |
|            |   | <i>VIMEX</i>                       | Short description of Vimex Endoscopy (Company - Poland)  |
|            |   | <i>REGENTIS BIOMATERIALS</i>       | Short description of Regentis Biomaterials (Company - Israel)  |
|            |   | <i>H&amp;D WIRELESS</i>            | Short description of H&D Wireless  |

|              |  |         |   |
|--------------|--|---------|---|
|              |  |         | (Company Sweden) –  |
| RESULTS      | List of the results achieved by the partners in the project course, in terms of scientific publications and patents  | PAPERS  | Here the list of the scientific papers derived from the project efforts is reported in Open Access. In addition, research results will be available once achieved according to the Open Research Data Pilot, through the ZENODO open repository. At this stage, the page includes a link to the community repository ZENODO |
|              |  | PATENTS | Here the list of the patents filed by the project partners is reported  |
| NEWS & MEDIA | This section aims at highlighting the most recent news and media contents related to the project, as well as to provide updates on the other projects funded in the same ADMAIORA Call (H2020-NMBP-TR-IND-2018) and in general on worldwide news dealing with the ADMAIORA field that can be of general interest for people along the whole value chain (Figure 9) | -       | -   |
| EVENTS       | Here the key events related to the ADMAIORA activities (both technical and non-technical ones) are highlighted and briefly described. Events will include scientific and technical workshops, seminars with the end-users, market-fairs-related  | -       | -   |

|            |  |   |   |
|------------|--|---|---|
|            | events, communication events, etc.   |   |   |
| CONTACT US | Here a form is available, allowing the user to contact the project managers. This form is associated with an e-mail address, <a href="mailto:admaiora@santannapisa.it">admaiora@santannapisa.it</a> , which will be daily monitored by the project Communication Manager (Figure 10) | - | - |


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## SUMMARY AND FIGURES

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### GENERAL INFORMATION

ADMAIORA (*AD*vanced nanocomposite *MA*terials *for in situ* treatment and *ultra*sound-mediated management of osteoarthritis) is a research project funded under the [Horizon 2020 EU Framework Programme](#) (Call: H2020-NMBP-TR-IND-2018, Research and Innovation action), coordinated by Prof. [Leonardo Ricotti](#) at the [Scuola Superiore Sant'Anna](#) (Pisa, Italy).

### WHAT IS OSTEOARTHRITIS?

Osteoarthritis (OA) is a major burden that affects ~ 40 million of EU citizens, with enormous direct and indirect costs for the European healthcare systems. This disease involves the degeneration of cartilage and other joint structures and is one of the most common causes of pain and disability in middle-aged and elderly people. Over the next decade, the number of people affected by OA is expected to double due to population ageing and increased rate of obesity (a risk factor for OA), resulting in a significant burden at the society level. According to the United Nations, by 2050, 130 million people will suffer from OA worldwide, of whom 40 million will be severely disabled by the disease. This represents an issue that is largely unsolved, at present.

### THE PROJECT

ADMAIORA aims, in the long-term, at increasing the healthy and active lifespan of people affected by OA, by considerably slowing down or even stopping the degeneration process, thus delaying by several years or even avoiding surgical interventions for total joint replacement.

To make this challenging objective a reality, the project partners will collaborate in the investigation of nanotechnologies, advanced materials, remotely physical stimulation, advanced manufacturing, wearable devices and cloud platforms into a unique workflow. ADMAIORA will explore the potential of smart nanocomposite materials and stem cells, in synergy with external physical stimuli (based on low-intensity ultrasound), for stopping the degeneration of cartilage during OA at early stages. Within the project time-frame (4 years), the target is to demonstrate the ground-breaking potential of such a regenerative approach, at a preclinical level.

ADMAIORA will contribute to keep EU a leader in high-impact and high-level research in the biomedical field. In addition, the project outcomes are expected to dramatically improve patients' quality of life and their healthy and active lifespan in the long-term, thus promoting healthy and active ageing, which is a priority of the European Commission. This would also imply to considerably reduce the financial burden on European healthcare systems, related to OA. Finally, the project efforts are also expected to generate new market opportunities in different niches, such as surgical/arthroscopic tools, biomaterials and cells for tissue regeneration, ultrasonic technologies and Internet-of-Things frameworks.

STARTING DATE: January 1st, 2019

DURATION: 4 years

FUNDING: ~ 5.4 mln €



NUMBER OF PARTNERS: 8

GRANT AGREEMENT: 814413

### ADMAIORA

THE CONSORTIUM

The BioRobotics Institute, Scuola Superiore Sant'Anna, Italy  
Istituto Ortopedico Rizzoli, Italy  
Bar-Ilan University, Israel  
PlasmaChem GmbH, Germany  
Image Guided Therapy SA, France  
Vimex, Poland  
Regentis Biomaterials LTD, Israel  
H&D Wireless, Sweden





### CONTACT US

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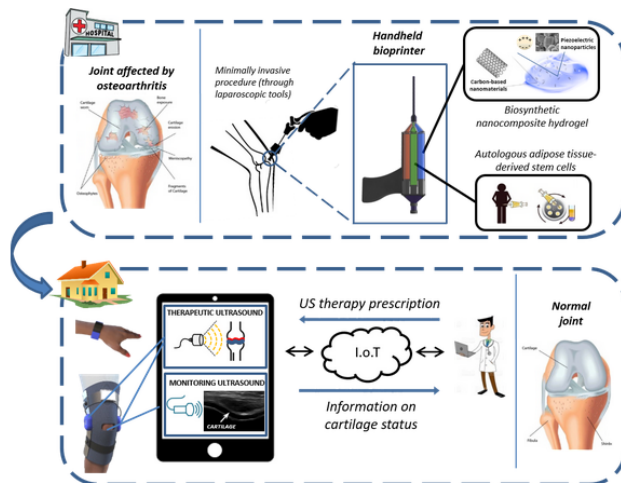


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Figure 4: Screenshot of the “Summary and Figures” website page.

## OBJECTIVES


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Overall, ADMAIORA will target a **ground-breaking paradigm that may revolutionize OA treatment**. Within the project time-frame (4 years) the target is to achieve a 60% reduction of degeneration in OA animal models treated with the ADMAIORA technologies, with respect to control (untreated) ones, after 4 weeks, and a 90% reduction after 3 months. To achieve this ambitious objective the Consortium will evolve and merge technologies that already showed a high potential as experimental proof of concepts and will bring them at a preclinical level.

The ADMAIORA Consortium will develop biosynthetic hydrogels embedded with carbon-based nanomaterials, conferring higher mechanical and lubrication properties, and piezoelectric nanoparticles enabling responsivity to remote wireless ultrasound waves. Stem cells derived from autologous adipose tissue, which already demonstrated anti-inflammatory and regenerative properties, will be entrapped in the hydrogels. Materials and cells will be delivered in situ through an innovative handheld 3D bioprinter, embedded in an arthroscopic tool. A custom brace will be designed and equipped with ultrasound probes for both monitoring the joint status and stimulating the implanted piezoelectric nanobiomaterial. A dedicated App will allow a direct connection between patient and physician in an Internet of Things framework.

## ADMAIORA

## THE CONSORTIUM

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 Bar-Ilan University, Israel  
 PlasmaChem GmbH, Germany  
 Image Guided Therapy SA, France  
 Vimex, Poland  
 Regentis Biomaterials LTD, Israel  
 H&D Wireless, Sweden



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Figure 5: Screenshot of the "Objectives" website page.

## People

THE BIOROBOTICS INSTITUTE – SCUOLA  
SUPERIORE SANT'ANNA

Leonardo Ricotti

Scientific coordinator  
admaiora@santannapisa.it

Lorenzo Vannozzi

Technical Project Manager  
l.vannozzi@santannapisa.it

Andrea Cafarelli

Post-Doc



Federica Iberite

PhD student



Francesco Fontana

PhD student



Denise Amram

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&gt; OBJECTIVES

&gt; PEOPLE

&gt; MANAGEMENT STRUCTURE AND BOARDS

&gt; DOWNLOAD

## PLASMA CHEM GMBH



Carsten Jost

CEO



Yirij Fedutik

## VIMEX

Krzysztof  
Lenartowicz

Vimex Project Manager



Tomasz Gapinski

Technical Project Manager



Paulina Galas

Team member

## REGENTIS BIOMATERIALS



Roni Wechsler

Regentis VP R&amp;D



Livnat Ben-Zur

Regentis General Manager &amp; EVP



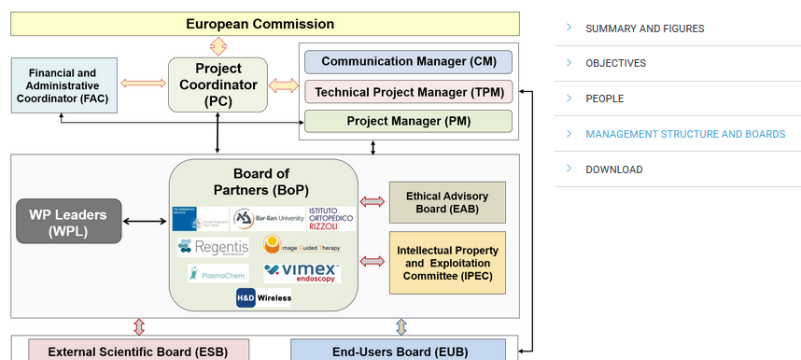
Agnesa Sharaev

Regentis Production Manager



Figure 6: Screenshot of the “People” website page (part of the page).

## MANAGEMENT STRUCTURE AND BOARDS

**PROJECT COORDINATOR (PC)**

The PC is the only contact point between the European Commission and the ADMAIORA Consortium and coordinates the different research and technological activities foreseen in the project.  
ADMAIORA PC: [Leonardo Ricotti](#)

**PROJECT MANAGER (PM)**

The PM supports the PC and is responsible for all the activities concerning the contractual, organizational and work-related project issues.  
ADMAIORA PM: *"to be recruited"*

**TECHNICAL PROJECT MANAGER (TPM)**

The TPM provides support on the organization and coordination of the technical aspects of the project.  
ADMAIORA TPM: [Lorenzo Vannozzi](#)

**COMMUNICATION MANAGER (CM)**

The CM is responsible for the communication initiatives. He supports the PC and PM in devising, organizing and managing such initiatives and to collect feedbacks for them.  
ADMAIORA CM: [Michele Nardini](#)

**FINANCIAL AND ADMINISTRATIVE COORDINATOR (FAC)**

The FAC will be closely working with the PM in order to synchronize the contractual and administrative items with the accounting and financial issues.  
ADMAIORA FAC: [Daniela Parra](#), [Beatrice Granvillano](#), [Monica Giagheddu](#), [Federica Radici](#).

**BOARD OF PARTNERS (BOP)**

The BoP is the organ that takes the main decisions during the project course.

**WORK PACKAGE LEADERS (WPL)**

The WPL are responsible for the timely implementation of the work planned in the respective work package.

**ETHICAL ADVISORY BOARD (EAB)**

The EAB monitors the implementation of activities, ensuring adherence to ethical principles and advises the PC and PM on ethical issues arising in the project.

**INTELLECTUAL PROPERTY AND EXPLOITATION COMMITTEE (IPEC)**

The IPEC is involved in the exploitation task. It monitors the Consortium intellectual property protection, defines an exploitation roadmap and aims at consolidating possible exploitable results, fostering the future commercialization of the project outcomes.

**EXTERNAL SCIENTIFIC BOARD (ESB)**

The ESB aims at advising the Consortium in the project course about the most appropriate scientific and technical decisions to be taken for achieving the final project objectives.

**END-USERS BOARD (EUB)**

The EUB includes end-users along the whole value chain. It favors the dissemination and communication of the project results, making easy contacts outside the Consortium with appropriate target groups.

Figure 7: Screenshot of the "Management structure and boards" website page (part of the page).




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## ABOUT THE CONSORTIUM



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- > ISTITUTO ORTOPEDICO RIZZOLI
- > BAR-ILAN UNIVERSITY
- > PLASMACHEM GMBH
- > IMAGE GUIDED THERAPY
- > VIMEX
- > REGENTIS BIOMATERIALS
- > H&D WIRELESS

For achieving the ambitious project objectives, a multidisciplinary Consortium with an internationally renowned background is the key for success. The ADMAIORA Consortium consists of:

- two **leading universities** with high international reputation on bioengineering and biorobotics (The BioRobotics Institute of Scuola Superiore Sant'Anna – the Coordinator) and on the development of carbon-based nanomaterials (Bar-Ilan University);
- one **scientific research hospital**, which is a European leader in osteoarthritis treatment by autologous stem cells and in the biological and preclinical validation of novel technologies for orthopaedic applications (Istituto Ortopedico Rizzoli);
- five strong motivated **SME companies** with long and consolidated traditions in the field of biomaterials for cartilage regeneration (Regentis), ultrasound technologies for diagnosis and treatment (Image Guided Therapy), synthesis and functionalization of nanomaterials, especially piezoelectric ones (PlasmaChem GmbH), development of custom surgical tools for arthroscopy (Vimex) and development of wireless communication, software and IoT technologies (H&D Wireless).

The countries represented in the Consortium are 6 (Italy, Israel, France, Germany, Poland and Sweden). This geographical distribution constitutes a living example of collaboration in the European Research Area, including Israel, which is third country eligible for H2020 funding.

### ADMAIORA

#### THE CONSORTIUM

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Vimex, Poland  
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H&D Wireless, Sweden

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Figure 8: Screenshot of the “About the Consortium” website page.



Figure 9: Screenshot of the “About the Consortium” website page.


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## Contact us

Name/Surname

e-mail

Subject

Your message





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### ADMAIORA

**THE CONSORTIUM**  
The BioRobotics Institute, Scuola Superiore Sant'Anna, Italy  
Istituto Ortopedico Rizzoli, Italy  
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Figure 10: Screenshot of the “Contact us” website page.

### 3 Conclusions

*In this document, the structure of the ADMAIORA web page of the Project is described. For each section, the structure (both first and second level, when available) and the contents are analysed. The key section contents are also displayed more in detail by means of corresponding screenshots of the online pages.*

*The structure described in this deliverable represents a complete architecture, but obviously open to continuous updates and changes, depending on possible communication and/or organisational needs that may arise in the project course. The website will be frequently monitored and updated in all its parts and, when needed, also in its structure by the project Communication Manager. This will be provided in concert with the update of the Facebook and Twitter profiles associated with the ADMAIORA project, in an organic and dynamic communication strategy.*