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- **Content**

<a href="#">1 Summary</a> .....	3
<a href="#">2 Deliverable 7.2</a> .....	3
<a href="#">2.1 Construction of a website portal</a> .....	4
<a href="#">2.2 Opening Page</a> .....	4
<a href="#">2.3 About us Page</a> .....	5
<a href="#">2.4 Objectives Page</a> .....	6
<a href="#">2.5 Partners Page</a> .....	7
<a href="#">2.6 Contact us Page</a> .....	8
<a href="#">2.7 Login Page</a> .....	9
<a href="#">3 Additional functionality of the administrator</a> .....	10



- **1 Summary**

The RADICLE project aims at developing a laser welding adaptive control system that can integrate sensor data from all 3 loops in “real-time” to adjust the laser parameters and deliver welded joints with zero defects.

The main objective of this deliverable is not only to enable communication within the consortium thanks to a member area dedicated for the RADICLE consortium, but also to serve as a vehicle for the dissemination of the project activities and results through the public pages.

The project started on the 1st of February 2015 and will have the duration of 36 months. The project website was planned to be delivered at month 3 to help the information share among the consortium members and between the consortium and the public.

This document summarises the design, creation and maintenance of the RADICLE project website, [www.radiclaser.com](http://www.radiclaser.com). The website is part of Work Package 7 – *Dissemination, Exploitation and Communication* which aims at ensuring that the project results reach a wider audience beyond the consortium. It serves as an efficient and effective information and communication system for the consortium members and the stakeholders. This deliverable also illustrates the main content features of the website by providing screenshots for the initial pages.

One of main features of the project website is the document sharing possibility. Each consortium member has its own login access to the restricted area of the website. It will also be possible to collect events information and news for the attention of the consortium. This expects the increase of the dissemination potential of the project.

Finally, the portal would be an excellent way of communication by having listed the contact details of the consortium members.

- **2 Deliverable 7.2**

The objective of Deliverable 7.2 is to create a website to disseminate activities beyond the consortium to a wider audience to function as the primary dissemination channel for RADICLE. The website is divided into two parts: the public pages, accessible by everyone on the internet containing all the non-confidential information about the project, and a member restricted area, accessible only by the RADICLE Consortium.

The public pages will be regularly updated with information about the progress and public results of the project, meetings, events, downloadable documents and useful links.

The member’s area is the tool for internal communication amongst project partners and contains meeting minutes, deliverables as they are realised, reports, legal, financial and administrative documents.

The website was constructed by EWF, with the input of all consortium members.



## • 2.1 Construction of a website portal

The page contents of the RADICLE website are optimised to be viewable in any popular internet browser program. The website has different operating modes according to user privileges – visitors, members and WP7 Lead Organisation. The website was developed according to the W3C standards considering accessibility issues.

The domain name is [www.radiclaser.com](http://www.radiclaser.com). During the runtime of the project, the website is hosted by EWF, but the contents are prepared in cooperation with all partners.

The structure of the website was developed by EWF after a sequence of discussions with the RADICLE partners in order to fulfil the user's needs. The website consists of a horizontal menu. The horizontal navigation bar tabs are: Home, About us, Objectives, Partners, Contact us and Login.

Navigation bars: News/Events and Documents will be created in the future.

## • 2.2 Opening Page

This page will appear if a user types the internet address (URL) of the project in an internet browser program: <http://www.radiclaser.com> or if the user clicks on the Tap "Home".

The content associated to this project is divided into several parts according to the type of information and can be accessed using the horizontal menu at the top of each page.

Horizontal menu line:

- "Home": Contains some general information about the RADICLE project. It gives an overview of the Project Latest developments, Aims and Goals;
- "About us": Gives a brief description of the market for laser systems; points out the advantages of Laser welding as a high performance joining process and describes the RADICLE partners and their roles in the project
- "Objectives": It gives a brief description of the scientific and technical objectives that the project aims to achieve;
- "Partners": Identifies the project partners with the correspondent logos and a brief description. Below the description there is a link to each partner website;
- "Contact us": Contact form and availabilities of the *Dissemination, Exploitation and Communication* Lead Organisation;
- "Login": This area is only available for consortium members and it lists several confidential documents;

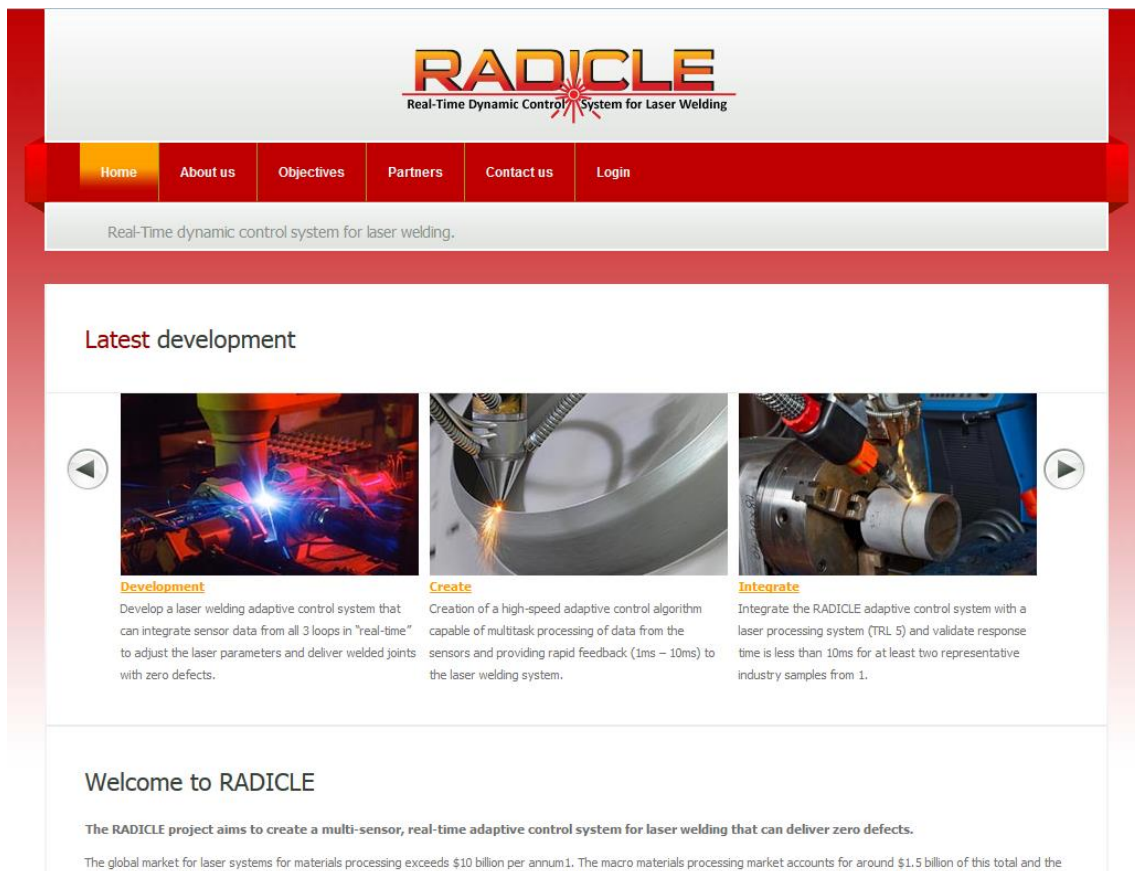


Figure 1 - Front page of the RADICLE project website

At the bottom of the Home page is also possible to see the co-financing disclaimer, as well as in all other pages.



Figure 2 - Bottom part of the front page of the RADICLE website

## • 2.3 About us Page

This page is divided in 4 sections and each section gives information about:

- Brief description, in numbers, of the global market for laser systems linked to the RADICLE aim;
- Advantages of laser welding as a high performance joining process;
- The different levels of inspection and control used in laser welding to assist in reducing and identifying weld defects;

The RADICLE project is managed by MTC and has received funding from the European Community's Horizon2020 Programme. Information is provided as is and no guarantee or warranty is given that the information is fit for any particular purpose. The user thereof uses the information at its sole risk and liability.

- RADICLE partners and their roles in the project.

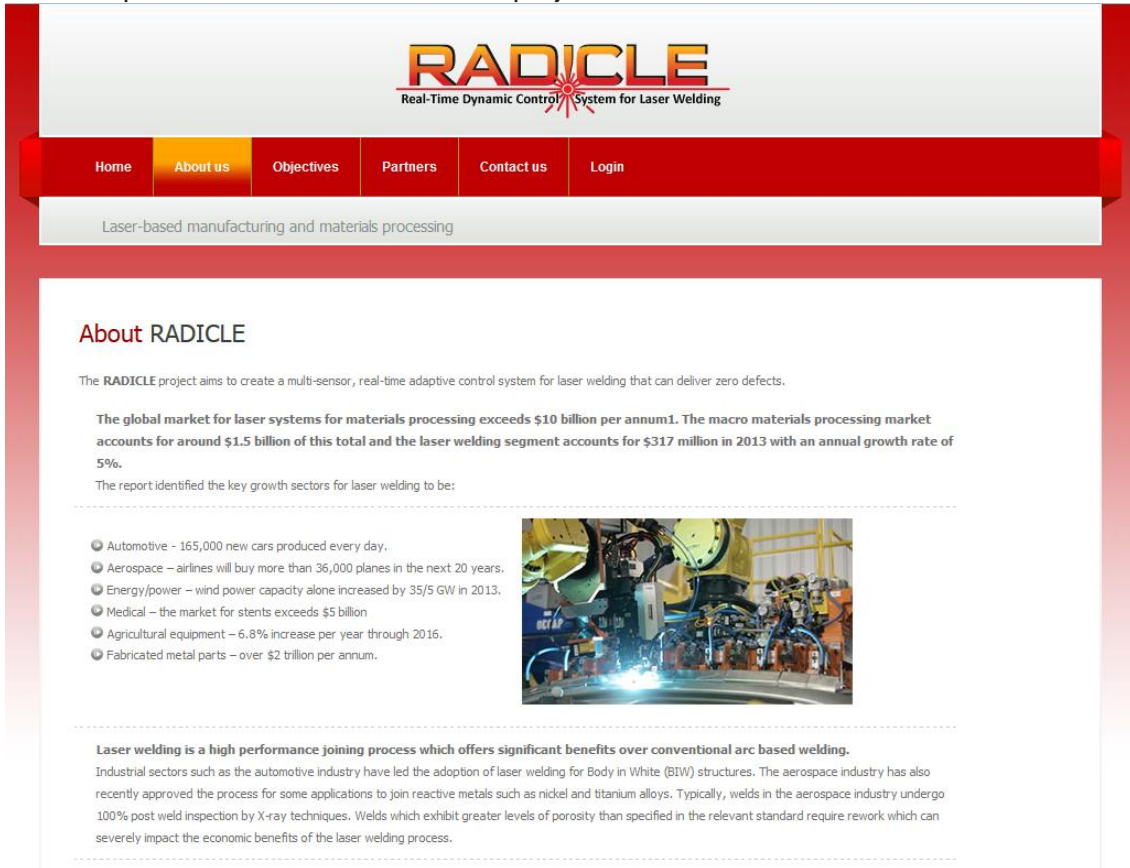


Figure 3 – About us page of the RADICLE website

## • 2.4 Objectives Page

This page provides the description of the RADICLE project Overall Aim and the several scientific and technical Objectives intended to be achieved by the end of the project, giving a brief idea of the project concept and purpose.

**RADICLE**  
Real-Time Dynamic Control System for Laser Welding

Home About us **Objectives** Partners Contact us Login

Laser welding adaptive control system

## Radicle Objectives

**Overall Aim:** Develop a laser welding adaptive control system that can integrate sensor data from all 3 loops in "real-time" to adjust the laser parameters and deliver welded joints with zero defects.

Further develop a detailed specification of the laser welding equipment, processes and parameters for 3-4 high value, safety critical components in the power, automotive and/or aerospace sectors including the material specification, type, size and frequency of defects present and estimated rework/scrappage costs.

Increased scientific understanding of the signal generated, for at least three different commercially available in-process monitoring sensors, when the possible range of defect types and sizes in the representative industry samples from 1.

Develop a plume analysis sensor system based on rapid digital image processing (>1.5kHz) and a knowledge base to adjust the laser-welding parameters during the welding operation.

Analyse the signal from existing laser depth measurement systems and incorporate signal into control algorithm to control welds of up to 20mm deep.

Develop an acoustic monitoring sensor, capable of sensing keyhole instability and relating this to at least three different weld defect types, with a detection frequency of at least 10kHz.

Creation of a high-speed adaptive control algorithm capable of multitask processing of data from the sensors and providing rapid feedback (1ms – 10ms) to the laser welding system, being able to simultaneously control at least three laser welding parameters.

Integrate the RADICLE adaptive control system with a laser processing system (TRL 5) and validate response time is less than 10ms for at least two representative industry samples from 1.

Figure 4 - Project Objectives page

## • 2.5 Partners Page

In this page the user can find the identification of the project consortium, with the name, a small description and logo of each partner.

# RADICLE

Real-Time Dynamic Control System for Laser Welding

**RADICLE**  
Real-Time Dynamic Control System for Laser Welding

Home About us Objectives **Partners** Contact us Login

The RADICLE project consortium

### RADICLE Partners

ALSTOM PERMANOVA Laser Chemical Engineering Ltd CENTRO RICERCA FIAT mtc  
EWF Rolls-Royce VTT TWI

Below is a list of the partners participating in the development of the RADICLE project.

#### mtc Manufacturing Technology Centre

**MTC - THE MANUFACTURING TECHNOLOGY CENTRE LIMITED LBG**

The Manufacturing Technology Centre (MTC) proves innovative manufacturing processes and technologies in an agile, low risk environment, in partnership with industry, academia and other institutions. We operate some of the most advanced manufacturing equipment in the world, and employ a team of highly skilled engineers, many of whom are experts in their field. This creates a high quality environment for the development and demonstration of new processes and technologies on an industrial scale. The MTC's areas of expertise are directly relevant to both large and small companies, and are applicable across a wide range of industry sectors. The MTC's members include global manufacturing companies from multiple sectors. Research partners include the University of Birmingham, University of Nottingham, Loughborough University and TWI Ltd. The MTC is part of the High Value Manufacturing Catapult which is supported by Innovate UK (formerly the Technology Strategy Board).

[launch site](#)

Figure 5 - Project Partners page

At the end of each partner description and logo there is an option “launch site” that links you directly to the partner website.

## • 2.6 Contact us Page

Discussion about RADICLE project and any related topic is also possible by addressing questions to the Project *Dissemination, Exploitation and Communication* Lead Organisation.

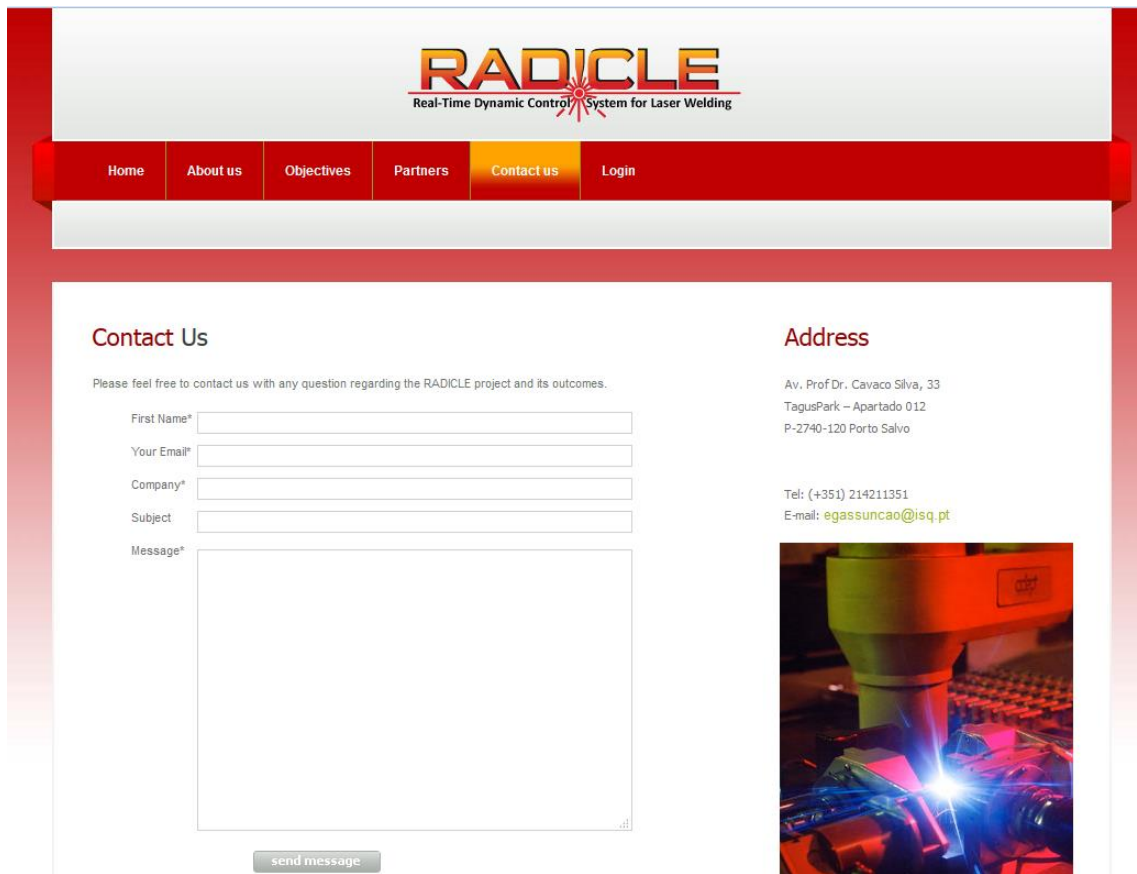


Figure 6 - Project Contact us page

## • 2.7 Login Page

This section of the website will be accessible only by the RADICLE Consortium.

Each consortium member receives login data (Username/Password) to be able to access to the confidential area of the website.

In case the user forgets the login information, it is possible to reset it by sending an e-mail to the project *Dissemination, Exploitation and Communication Lead Organisation*, which will reset the partner's password.



[home](#) [about](#) [objectives](#) [partners](#) [contact](#)

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**Figure 7 - Login interface for registered members**

After logging in, the project members will be able to download documents from one of the following folders:

- Deliverables;
- Dissemination;
- Project Documents;
- Meetings.

### • **3 Additional functionality of the administrator**

The administrator has total control over the web site by managing the content and has the rights to add or delete menu points to the horizontal menu. All the documents will be uploaded by the administrator that will be responsible for editing, outlining or track any uploads to the website. All significant changes are done after the approval of the consortium.