



## BD2Decide

### Big Data and models for personalized Head and Neck Cancer Decision support

<b>TITLE</b>	<b>Project web site</b>		
<b>Deliverable No.</b>	D9.1		
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<b>WorkPackage No.</b>	WP9	<b>WorkPackage Title</b>	Communication & Exploitation
<b>Status<sup>1</sup></b>	FINAL	<b>Version No.</b>	1.0
<b>Delivery Date</b>	01/05/2016	<b>Actual delivery</b>	10-05-2016
<b>Dissemination level</b>	PU		
<b>DOCUMENT ID</b>	D9.1 Project web site		
<b>FILE ID</b>	BD2Decide D9.1		
<b>Related documents</b>	Technical Annex I DoA version 21/10/2015		

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<sup>1</sup> Status values: TOC, DRAFT, FINAL



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### *Revision History*

<b>Revision no.</b>	<b>Date of Issue</b>	<b>Author(s)</b>	<b>Brief Description of Change</b>
0.1	01.04.2016	V. Tountopoulos	ToC
0.2	11.04.2016	F. Mercalli	Web site structure
0.3	26.04.2016	L. Kallipolitis	Draft Web site
0.4	04.05.2016	V. Tountopoulos	Draft version of the Deliverable
0.5	06.05.2016	V. Tountopoulos	Prefinal version
1.0	09.05.2016	V. Tountopoulos	Final version

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### *Addressees of this document*

This document is addressed to the BD2Decide Consortium. It describes the technology and the structure of the project web site.

This document will be delivered to the European Commission.



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### *Abbreviations and definitions*

<b>Abbreviation</b>	<b>Definition</b>
CMS	Content Management System
HNC	Head and Neck Cancer
SEO	Search Engine Optimisation
URL	Uniform Resource Locator



### *Executive Summary*

The aim of this document is to act as supplementary reference material, when using the BD2Decide Web Site. It analyses the structure and the contents of the Web Site, which comprise a key means for the dissemination and communication activities of the project.

The Web Site aims to assist all the project Consortium members in their promotional activities and in effectively transferring the knowledge from conducting research on big data technologies and prognostic models for personalised decision making in head and neck cancer (HNC) situations.



## 1 ABOUT THIS DOCUMENT

This document accompanies the delivery of the project Web Site in Deliverable D9.1. It acts as supplementary reference material, which explains the structure and the technologies used for the development of the Web Site. It also refers to the maintenance of the Web Site contents so that it comprises a living key means for the dissemination and communication activities of the project in order to i) raise awareness on the project research on big data technologies and prognostic models for personalised decision making in head and neck cancer (HNC) situations, and ii) engage all the target stakeholders in interacting with the ongoing work conducted in the course of the project.

This report is structured as follows:

- Section 2 analyses the main characteristics of the Web Site, the technologies which were used in the development process and the main functional parts of the Web Site.
- Section 3 describes the content production and maintenance procedures, including the roles accessing the Web Site and the type of content which is available for publication on the BD2Decide Web Site.
- Section 4 briefly introduces the investigation analysis of tool, which will be used for monitoring the traffic on the Web Site.
- Section 5 concludes this document.



## 2 THE WEB SITE

This section presents an overview of the main characteristics of the BD2Decide Web Site and the current structure of the site. It also describes the technology, which has been used to develop the Web Site.

### 2.1 Main characteristics

The BD2Decide Web Site is the central point for dissemination purposes and the main dissemination and communication channel. The Web Site has been developed with the aim not only to raise awareness on the project concepts and envisaged results, but also to actually engage the target stakeholders in delivering innovative ideas on how big data technologies can strengthen the power of scientists in addressing the evolving challenges of the predictive analysis of clinical data for providing personalised treatment of head and neck cancer situations through effective and evidence based decision support.

The project Web Site has been made available under the [www.bd2decide.eu](http://www.bd2decide.eu) domain. It is officially made online, and is continuously being maintained to provide up-to-dated information and material of the project deliveries and news. The design follows the principle of the project logo (see Annex 7.1).

The main characteristics of the Web Site are summarised in the following:

- The objective: the main objective of the Web Site is to act as the main dissemination and engagement channel.
- The key message: The online meeting point for researchers, clinicians, scientists and technology providers for personalised HNC decision support through big data technologies and prognostic analysis models.
- The target stakeholder(s): All the target audience of the BD2Decide project, including researchers, clinicians, scientists and technology providers, and the general public as well.
- The providers of the Web Site content: All the BD2Decide participants through their work conducted within the project lifetime and the associated information sources, such as blogs and social media of relevant initiatives.
- The communication method(s): All stakeholders have access to the Web Site through the Internet traffic, either by directly accessing the [www.bd2decide.eu](http://www.bd2decide.eu) Uniform Resource Locator (URL) or indirectly by accessing it via any Search Engine Optimisation (SEO) service or relevant referral site.
- Activity required for production and delivery: In order for the Web Site to accomplish the set objective, a content production and delivery process is defined, which involves i) gathering content from all project participants and outside sources, ii) using the inherit Content Management System (CMS) functionalities to manage Web content, and iii) following a review process for content publication.





- Frequency of content update: Upon the release of the Web Site on M4, the contents of the Web Site must be up-to-dated. Due to the different time scale requirements for updating specific Web Site sections, a content update procedure on a regular basis is adopted, throughout the project lifetime.
- Feedback and follow-up activity: A specific project team within WP9 will ensure the validity and the timely updates on the Web Site contents.

## 2.2 Structure of the Web Site

Currently, the Web Site acts as an information portal to communicate the BD2Decide project objectives, expected results and daily news. It does reflect the initial stage of the project research, but is being continuously updated and extended, in order to include the project development progress and deliver a professional interactive tool used by the target stakeholders to exchange views and ideas on the validation of big data technologies and prognostic models for personalised decision making in HNC situations.

The Web Site is being developed in accordance to the EC guidelines and rules with respect to the proper use of the Commission funding. The current structure identifies the following areas:

- The Home page; this page gives the message of the project and visualises the highlights of the project latest scope, strategy, expected results and engagement activities. It, also, navigates the visitors to all the pages of the Web Site and enables them contact us for any issue related to the project work.
- The “Project Information” section; this section summarises the scope of the BD2Decide work by detailing the strategy and approach to meet the set business and scientific objectives. It also elaborates on the work plan structure to perform the envisaged work and the expected tangible results, which are summarised as technology tools being integrated into the BD2Decide platform. This section will further be updated with the case study scenarios that will be used to validate the project concepts.
- The “Consortium” section; this section makes an overview of the project participants and links to a single page per participant, detailing on the profile of the BD2Decide Consortium members. The profile summarise the partner logo, a brief description of the organisation/legal entity, their role in the project and contact information, such as the partner representative in the project, their email address and a link to organisation web site.
- The “Downloads” section; this section offers useful content produced by the project participants with respect to:
  - Public Deliverables: this page includes the list of the BD2Decide deliverables, which are classified as public;
  - Publications: this page summarises the project publications and articles to scientific and business referred journals and other scientific and business magazines, as well as the project publications to the proceedings of conferences with referred paper acceptance procedures in place;

- Newsletters: this page hosts the newsletters, which are periodically produced by the BD2Decide project to inform about the project progress;
- Other content: this page maintains the digital dissemination content, which is produced in the course of the BD2Decide project, like posters, brochures and flyers.



Fig. 1: Screenshot from the home page of the BD2Decide Web Site.

- The “Project Blog” section; this section integrates
  - The project news items, such as events relevant to the BD2Decide project scope or any other reference Web material;



- The events, in which we are participating for dissemination, communication and exploitation purposes;
- The achievement of the work conducted in the course of the project to produce the expected results;
- Any other project specific announcement.

An overview of the BD2Decide Web Site is seen in Fig. 1.

## 2.3 Technology used

The Web Site of the BD2Decide project is built on Drupal [1]. Drupal is a free software package that allows you to easily organize, manage and publish your content, with an endless variety of customisations.

Drupal is open source software maintained and developed by a community of more than a million users and developers. It's distributed under the terms of the GNU General Public License (or "GPL") [2], which means that anyone is free to download and share it with others. This open development model implies that people are constantly working to make sure that Drupal is a cutting-edge platform, which supports the latest technologies that the Web has to offer. The principles<sup>2</sup> of the Drupal project encourage modularity, standards, collaboration, ease-of-use, and more.

Beyond the community, there are many dedicated companies in the Marketplace<sup>3</sup> to help with one's Drupal project. Providing expertise and a deeper understanding, they can help with design, development, hosting, spam blocking, theming, training, and more.

Drupal CMS benefits are listed below:

- Organise and Find: Drupal comes with many tools to help one organise, structure, find and re-use their content: categorise with taxonomy, automatically create friendly path URLs, create custom lists, associate content with other content on your site, and create smart defaults for content creators.
- Creative Content: Manage content with an easy-to-use web interface. Drupal's flexibility handles countless content types including video, text, blog, podcasts, and polls with robust user management, menu handling, real-time statistics and optional revision control.
- Administer: Drupal comes with great options for new user accounts and user permissions. Users can be assigned one or more roles, and each role can be set up with fine-grained permissions allowing users view and create only what the administrator permits. The Drupal 7 admin theme makes administering a site easier than ever.
- Collaborate: Drupal's focus on social publishing can assist in creating sites and applications to allow users express their opinions and engage with one another. The collaboration

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<sup>2</sup> <https://www.drupal.org/about/mission-and-principles>

<sup>3</sup> <https://www.drupal.org/drupal-services>



functionalities enable users have tight control over who can create, view, administer, publish and otherwise interact with content on a Drupal site.

- **Build:** Develop internal and external-facing websites in a matter of hours, with no custom programming. No need to start from scratch every time one wants to build a new site, either. One can utilise a multi-site configuration or choose a Drupal distribution (installation profile). These provide a pre-defined configuration of site features and functions for a specific purpose or type of site, available as a single download.
- **Design and Display:** Drupal's presentation layer allows designers to create highly usable, interactive experiences that engage users and increase traffic. Use an existing Drupal theme for one's site, giving it an instant identity.
- **Extend:** With more than 15,000 available modules, the vast majority of the site requirements can be addressed with Drupal core and available add-on modules. Thus, the main focus is on building great web sites, not re-creating features available elsewhere. One can even contribute modules for others to use.
- **Connect:** Drupal makes it easy to connect the Web Site to other sites and services across the Web, using aggregation, feeds, and search engine connection capabilities. Social networking integration is also widely supported to help in engagement with a wider audience. Drupal also offers the site easy ways to interact with external media and file services.



### 3 MANAGING CONTENT

This section describes the available content types, which have been configured for the BD2Decide Web Site and the procedures for publishing valid content on it.

#### 3.1 Available content types

The Web Site offers different types of content, which can be uploaded and regularly updated, as follows:

- **Generic page:** this content type refers to a general Web page created to support the current content already published on the Web Site. The page title, the date and time of creation/modification and the page description are the necessary fields.
- **Deliverables:** this content type refers to the public documents directly produced by the BD2Decide Consortium, as part of the Horizon 689715 Grant Agreement. The deliverable title and the respective file are the necessary fields.
- **Publications:** this content type refers to any kind of publications generated by the project. The publication title, the authors, the publication date, the place and the publication description are the necessary fields, supported by any additional comments.
- **Newsletter:** this content type refers to electronic newsletters generated by the project to be sent via email subscription lists.
- **Blog:** this content type refers to a blog entry, which is uploaded on the Web Site in the “project blog” area. The blog content type can be either an event or a project news item, referring to the progress of the work conducted in the course of the project. The blog post title, the type of media content attached and the description of the post are the necessary fields.
- **News:** this content type refers to project news with respect to activities and plans relevant to the project work. The news title, the date of news event occurrence and the news description are the necessary fields.
- **Material:** this content type refers to any electronic promotional material (i.e. electronic brochure, poster, etc.) generated by the project. The title of the material and the actual file are the necessary fields.

These types correlate to the various content blocks (as they are defined in Drupal), which can be seen in the project so far, but further content types may be added in the future, as necessary.

#### 3.2 Procedures for Publishing Content

In order to better control the procedures for updating content on the Web Site and maintaining the functionalities offered to the end users, a number of various roles have been defined, each of which has different gradually-evolved access rights. These roles are analysed in Table 1.

**Table 1: The roles defined in the BD2Decide Web Site.**

<b>Role Name</b>	<b>Role Description</b>	<b>Associated Project Members</b>
Administrator	This role grants all the access rights to the authenticated users of the Site and has the capability to update the functionalities offered on the home page and the general Web structure.	ATC maintains the administration. AOP as the Project Coordinator will be granted administration privileges
Publisher	This role is responsible for adding different content types. The role is also responsible for reviewing and approving any content type authored by the editor role and publishing it on the specified content type block.	Apart from ATC, AOP and MME are also attributed with the publishers' role, as the Project Coordinator and the WP9 respectively.
Editor	This role is responsible for adding different content types. The role is the sole responsible for modifying their own content, while the role has no access rights to the content authored by an agent of the same role.	One presentative per partner and the appointed WP leaders are attributed with the editor's role.

It is apparent that the access rights given to a role can be inherited to the preceding role.

Following the role description in Table 1, the different content types can be uploaded/ updated by the designated roles. The administrator is responsible for fully accessing all the content types defined in section 3.1, while the content of blog posts, news, publications and events can be additionally accessed from the two other roles. The procedure is as follows:

- i. An editor decides to create or modify a content type.
- ii. Upon creation, the content is submitted for review to the publishers' team, through the workflow tab.
- iii. An email notification is sent to the publishers' role, who is responsible for reviewing the content and:
  - Marking the content as "draft", thus an email notification is sent to the originating editor for content modification.
  - Marking the content as "publish", thus the publishers' role decides to whether the content is published on the specified content type block immediately or at a certain time period.
- iv. The content is finally approved and is placed in the proper block on the Web Site.
- v. At any time, the editor and/or the publishers can change the status of a published content to draft and the process for content modification is repeated from step i.



## 4 WEB MONITORING TOOLS

In order to get quantitative realisation on the Web Site impact to the target stakeholders and measure the effectiveness of this communication channel, a number of traffic analysis tools have been investigated and evaluated.

The evaluation has been based on the requirements set for such a tool, which are summarised in the features listed in Table 2.

**Table 2: Requirements on features for monitoring the Web Site of the BD2Decide project.**

Feature	Description
Daily analysis of views/visitors	Should have a detailed info of the per day visits/views
Number of visits	Should aggregate the number of visits
Unique visitors	Should identify the unique visitors per day
Page views	Should identify the pages viewed per day
Visit Duration	Should calculate the average time for visiting the Site / page
Demographic analysis of visits	Should analysis the visits per location
Technology	Which browsers are widely used, so that to optimize the site views for these browsers
Kind of traffic	Should distinguish between direct (www.bd2decide.eu), search engine (which keywords are used), referral traffic (re-direction from other sites)
Source of traffic for referrals	Should optionally discover where social media contribute to the promotion of the Site

Based on these requirements, we have evaluated a number of publicly available tools with respect to their capabilities to facilitate these features, such as:

- <http://piwik.org/>
- <http://awstats.sourceforge.net/>
- <http://statcounter.com/>
- <http://www.phpmyvisites.us/>
- <http://www.tracewatch.com/>

All these tools satisfy the fundamental requirements set in Table 2. These tools differentiate from Google Analytics<sup>4</sup>, which is one of the most popular and common traffic analysis and monitoring tools widely used, in the sense that they can be installed locally to the Web Server of the Web Site

<sup>4</sup> <https://www.google.com/analytics/>



(hosted at ATC premises) and they do not raise any privacy issues for the use of third party providers in the analysis of the statistics on the usage of the Web Site.

The **piwik tool** has been considered as the most appropriate solution, since it makes use of the logs provided by the Web Server of the Site.





## 5 CONCLUSIONS

This document accompanies the BD2Decide Deliverable D9.1 on the project Web Site. It is a report on the activities and the contents of the Web Site of the BD2Decide project, which is available at [www.bd2decide.eu](http://www.bd2decide.eu).

The BD2Decide Web Site has been released in its current form to act as the main means of dissemination and communication. The functionalities and the content are continuously revised and updated to meet stakeholders' expectations and engage them in the research and promotional activities.



## 6 REFERENCES

- [1] Drupal Content Management System, <https://www.drupal.org/>.
- [2] GNU General Public License – GPL version 3, <http://www.gnu.org/copyleft/gpl.html>, June 2007.

## 7 ANNEX

### 7.1 The BD2Decide logo

Communication and branding is nowadays essential to enhance visibility and awareness of a project and business in general. The logo is the main graphic identity element and the key to build a successful dissemination campaign.

The logo is in all graphic material and documents related to the project. Therefore, the design of the BD2Decide logo has been carried out in a way that it can be representative to the project concepts and objectives, but it can also go beyond it and reflect the vision for the use of ICT technologies for the implementation of prognostic models in the personalised HNC decision support.

The main characteristics of the project logo are:

- The objective: A visual representation of the reference to the technologies for big data and models for personalised HNC decision support.
- The key message: Provide awareness and visibility on the use of ICT technologies for the implementation of prognostic models in the personalised HNC decision support.
- The target stakeholder(s): All the target audience of the BD2Decide project, including researchers, clinicians, scientists and technology providers, and the general public as well.
- The provider of the logo: The collaboration of the designers and the BD2Decide participants, being involved in the implementation of WP9 activities.
- The communication method(s): Any online and printed material making reference to the project activities will use the project logo.
- Activity required for production and delivery: No specific configuration.
- Frequency of content update: The project logo is designed once to maximize visibility.
- Feedback and follow up activity: The project logo is mainly used to engage stakeholders and promote project objectives and activities.

The logo of the BD2Decide project is seen in Fig. 2.



Fig. 2: The logo of the BD2Decide project.