H2020 Project: Smart Resilience Indicators for Smart Critical Infrastructure

D6.1 - Project website

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# Project website

## Key Information

<table>
<thead>
<tr>
<th>Report Title:</th>
<th>Project website</th>
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<tbody>
<tr>
<td>Author(s):</td>
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<tr>
<td>Responsible Project Partner:</td>
<td>ED</td>
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### Document Data

<table>
<thead>
<tr>
<th>File name / Release:</th>
<th>D61Report_v05bc15112016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pages:</td>
<td>21</td>
</tr>
<tr>
<td>Status:</td>
<td>Final</td>
</tr>
<tr>
<td>No. of annexes:</td>
<td>1</td>
</tr>
<tr>
<td>Dissemination level:</td>
<td>PU</td>
</tr>
<tr>
<td>Grant Agreement No.:</td>
<td>700621</td>
</tr>
<tr>
<td>Project No.:</td>
<td>12135</td>
</tr>
<tr>
<td>Deliverable No.:</td>
<td>D6.1</td>
</tr>
</tbody>
</table>

### Date

- **Due date:** October 31, 2016
- **Submission date:** November 29, 2016
- **Review date:** November 10, 2016
- **Approval date:** November 15, 2016

### Keywords

- Website, communication, web portal, dissemination

### Reviewed by

- Udi Barzelay

### Approved by Coordinator

- A. Jovanovic

Athens, November 2016
## Release History

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<td>Version for review</td>
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<tr>
<td>2</td>
<td>November 10, 2016</td>
<td>1st reviewer comments received and addressed.</td>
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Modern critical infrastructures are becoming increasingly smarter (e.g. the smart cities). Making the infrastructures smarter usually means making them smarter in the normal operation and use: more adaptive, more intelligent etc. But will these smart critical infrastructures (SCIs) behave smartly and be smartly resilient also when exposed to extreme threats, such as extreme weather disasters or terrorist attacks? If making existing infrastructure smarter is achieved by making it more complex, would it also make it more vulnerable? Would this affect resilience of an SCI as its ability to anticipate, prepare for, adapt and withstand, respond to, and recover? What are the resilience indicators (RIs) which one has to look at?

These are the main questions tackled by SmartResilience project.

The project envisages answering the above questions in several steps (#1) By identifying existing indicators suitable for assessing resilience of SCIs (#2) By identifying new smart resilience indicators including those from Big Data (#3) By developing, a new advanced resilience assessment methodology based on smart RIs and the resilience indicators cube, including the resilience matrix (#4) By developing the interactive SCI Dashboard tool (#5) By applying the methodology/tools in 8 case studies, integrated under one virtual, smart-city-like, European case study. The SCIs considered (in 8 European countries!) deal with energy, transportation, health, and water.

This approach will allow benchmarking the best-practice solutions and identifying the early warnings, improving resilience of SCIs against new threats and cascading and ripple effects. The benefits/savings to be achieved by the project will be assessed by the reinsurance company participant. The consortium involves seven leading end-users/industries in the area, seven leading research organizations, supported by academia and lead by a dedicated European organization. External world leading resilience experts will be included in the Advisory Board.
Executive Summary

This deliverable document supports and presents the initial version of the project website, which can be visited at www.smartresilience.eu-vri.eu. It describes its structure as well as the specification and the technical development approach adopted. The website is published since 20th July 2016 and since August the statistics measurements have been added. The statistics will continue to monitor the visits and be reported regularly during the management reports and official dissemination deliverables. The content of the project website will be updated during the project lifetime, to document progress and promote progress and results during the various project phases for communication and dissemination and will promote the visibility of the project and its results.
Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Acronyms</td>
<td>viii</td>
</tr>
<tr>
<td>1 Introduction</td>
<td>9</td>
</tr>
<tr>
<td>2 Structure and specifications</td>
<td>10</td>
</tr>
<tr>
<td>3 Organisation of pages</td>
<td>12</td>
</tr>
<tr>
<td>4 Technical description</td>
<td>15</td>
</tr>
<tr>
<td>4.1 Architectural overview</td>
<td>15</td>
</tr>
<tr>
<td>4.2 About Drupal</td>
<td>16</td>
</tr>
<tr>
<td>4.3 Drupal modules description</td>
<td>16</td>
</tr>
<tr>
<td>4.3.1 Drupal core</td>
<td>16</td>
</tr>
<tr>
<td>4.3.2 Additional modules</td>
<td>17</td>
</tr>
<tr>
<td>5 Browser compatibility / analytics</td>
<td>18</td>
</tr>
<tr>
<td>6 Conclusion</td>
<td>19</td>
</tr>
<tr>
<td>ANNEXES</td>
<td>20</td>
</tr>
</tbody>
</table>
List of Figures

Figure 1: SmartResilience website structure ................................................................. 10
Figure 2: SmartResilience website Home Page ............................................................ 12
Figure 3: SmartResilience website architecture ........................................................... 15
Figure 4: Part of website statistics information (time of visits and visitor geographical
distribution) .......................................................................................................................... 18
List of Tables

Table 1: Points raised by reviewers and author’s response ............................................. 21
## List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Operating System</td>
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<tr>
<td>SQL</td>
<td>Structured Query Language</td>
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<tr>
<td>WYSIWYG</td>
<td>What You See Is What You Get</td>
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</table>
1 Introduction

The project website plays a key role in the dissemination of the project. First of all, it is one of the main drivers of facilitating the recognition of the project by the wider audience, while it contributes to the unique identity that it needs to demonstrate. It is the place where stakeholder and interested parties can find project information and results, along with news and events. The website is an integral part of the dissemination plan (D6.2 – Early Dissemination and Exploitation plan), along with a set of other tools, while it is included in the context of WP6 – Dissemination and Exploitation.
2 Structure and specifications

Figure 1 below displays the structure of the SmartResilience website.
At the homepage the limit of the news post is reduced to 3-4 lines of text. If the text is longer, then it ends with a “…” and a link “Read More…” pointing to the “News” section, where the visitor can read the entire text. The same applies for the events posts at the homepage where the link “Read More…” points to the “Events” section.

The “About” section includes information about the concept of the project and the approach followed.

The “Case Studies” section provides a short and comprehensive description of the SmartResilience use cases where the methodologies and tools will be tested and evaluated.

The “Results” section will include the results of the projects, like deliverables, demonstration videos etc. Public results will also be available for free download.

The “Members Area” links to the internal collaboration platform, intended to be used by the SmartResilience partners.

The “Related projects” section includes links to other projects, initiatives etc.

On the top of each page the project logo is placed on the top left corner.

The SmartResilience website has been designed to quickly and schematically (where possible) address the key questions that external visitors are expecting from the website, including what the project is about, what it is delivering and why, who is participating, any additional details regarding communication (internal and external) and dissemination and who can be contacted, in case more information is needed.

The project website will continuously evolve and develop as the project itself matures. A dedicated server provisioning solution has been adopted to deliver flexibility and choose the most appropriate tools and technologies to support the future website needs. The project domain name was selected to be http://www.smartresilience.eu-vri.eu/.

In order to provide a useful and relevant website even in advance of a comprehensive dissemination requirements analysis and subsequent dissemination plan, it was decided that the initial version of the project website would be a traditional static website addressing the predicted immediate needs of interested external stakeholders. Following a review of similar project websites and a discussion within the consortium, the website was conceived to answer key questions that researchers, technology experts, analysts, industry, academia and other stakeholders could be expected to have.
3 Organisation of pages

Figure 2: SmartResilience website Home Page
The Home page has the objective to briefly introduce the project, welcome visitors to the website, and provide key facts about the project and links to all issues/subjects addressed by the SmartResilience project. Moreover, it gives the project some context by referring to the funding programme and related organisations. The initial Home page is reproduced in Figure 2. A picture area of the front side is used to convey some messages about the context of the project. These pictures will be changed during the project with more related ones, even with pictures from actual work and trials when these become available. Moreover, the home page provides information about the SmartResilience consortium partners and direct links to their websites by clicking on their logos. Their full contractual names are provided when “hovering” with the mouse over their logos. Links to the Twitter and LinkedIn accounts of the SmartResilience project are also visible at the Header and Footer of the “Home” page.

More specifically, the Home page is the gateway to the entire website. This page clearly directs the visitor to the individual sub-sections according to their importance.

The header consists of the SmartResilience logo (also developed by ED). The website offers only English as a language.

The design is based on a responsive web-design theme.

Under the website header, the main menu with links to the webpages is placed, which provides access to the pages structure as presented above, at Error! Reference source not found.. These links can be renamed if needed. The main menu works as a dropdown list: After the mouse is placed over a menu item, the menu opens and displays the links to subsections and their pages. Navigation opens up to the second level. Thanks to this solution, the visitor can access all the information in the site via a single mouse-click.

The middle of the Home page is devoted to the presentation of news and events and the SmartResilience project tweets. The news and events modules show the most recent news and events items. Older news and events items can still be accessed by the main menu.

Finally, LinkedIn and Twitter icons are added and hyperlinked to the SmartResilience social media accounts both on the upper and bottom side of the Home page.

The footer of each page includes the following information (left-hand side):

---

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 700621

---

The footer of each page include the following form (center). This is an effort to collect the details of the interested parties who want to receive our newsletters:

---

SUBSCRIBE TO OUR NEWSLETTER
[last name] [Organization]
[profession] [Email address]

Email Format
• html
• text

[Subscribe button]
The footer of each page includes the following information (right-hand side):

PROJECT COORDINATOR
Aleksandar Jovanovic
Email: jovanovic@eu-vri.eu

Bastien Caillard
Email: caillard@eu-vri.eu
4 Technical description

4.1 Architectural overview

An architectural overview of the SmartResilience website, conveying the most significant architectural design decisions made is shown in the figure below.

The following diagram provides an overview of the architecture of the SmartResilience system.

![Figure 3: SmartResilience website architecture](image)

The general workflow of the system is the following:

1. The user performs an action in the system, such as requesting a page or navigating to a page.
2. The proxy server evaluates the requests and transfers them to the Drupal application. In case of a problematic request, an error response is displayed for the end-user. The purpose of the specific server is to provide security and to speed up access to the SmartResilience application.
3. The request is handled by the Drupal application, which is installed in an Apache server with Linux OS, and its modules.
4. Several SQL queries are executed against the MySQL database, which are triggered via the Drupal application.
5. The response of the database is a list of contents of the appropriate content types and useful information, such as permissions for users and several blocks, which are displayed on the selected theme.
6. Several Drupal modules process the response of the MySQL database and the results are displayed on a Drupal theme.
7. Several requests for videos hosted by the YouTube site can be serviced by the Drupal application over the proxy server.
8. The response is evaluated by the Drupal application and is placed in a section of a Drupal theme.
4.2 About Drupal

Drupal was used as a back-end for the implementation of the website. Drupal is an open source content-management framework written in PHP and used for at least 2.2% of all Websites worldwide, in a wide range of different applications, from personal to commercial and government use.¹ Drupal consists of the core modules, which can be selectively be activated and deactivated, providing common content management features, and additional modules, which extend these functionalities. The set of the core and additional modules that were used for this website, along with a short description of their functionality, is included in the next paragraph.

4.3 Drupal modules description

Below is a list of all Drupal modules, which have already been installed on the Drupal Application server, with a short description of their operation.

4.3.1 Drupal core

The modules, which have been enabled for the SmartResilience project, are listed below:

- **Block.** Controls the visual building blocks a page is constructed with. Blocks are boxes of content rendered into an area, or region, of a web page.
- **Colour.** Allows administrators to change the colour scheme of compatible themes.
- **Comment.** Allows users to comment on and discuss published content.
- **Contextual links.** Provides contextual links to perform actions related to elements on a page.
- **Dashboard.** Provides a dashboard page in the administrative interface for organizing administrative tasks and tracking information within your site.
- **Database logging.** Logs and records system events to the database.
- **Field.** Field API to add fields to entities like nodes and users.
- **Field SQL storage.** Stores field data in an SQL database.
- **Field UI.** User interface for the Field API.
- **File.** Defines a file field type.
- **Filter.** Filters content in preparation for display.
- **Help.** Manages the display of online help.
- **Image.** Provides image manipulation tools.
- **List.** Defines list field types. Use with Options to create selection lists.
- **Menu.** Allows administrators to customize the site navigation menu.
- **Node.** Allows content to be submitted to the site and displayed on pages.
- **Number.** Defines numeric field types.
- **Options.** Defines selection, check box and radio button widgets for text and numeric fields.
- **Overlay.** Displays the Drupal administration interface in an overlay.
- **Path.** Allows users to rename URLs.
- **RDF.** Enriches your content with metadata to let other applications (e.g. search engines, aggregators) better understand its relationships and attributes.
- **Search.** Enables site-wide keyword searching.
- **Shortcut.** Allows users to manage customizable lists of shortcut links.
- **System.** Handles general site configuration for administrators.
- **Taxonomy.** Enables the categorization of content.
- **Text.** Defines simple text field types.
- **Toolbar.** Provides a toolbar that shows the top-level administration menu items and links from other modules.
- **Update manager.** Checks for available updates, and can securely install or update modules and themes via a web interface.
- **User.** Manages the user registration and login system.

¹ https://en.wikipedia.org/wiki/Drupal
4.3.2 Additional modules

Several modules have been downloaded from the official Drupal site and installed for performing miscellaneous actions. These are listed below:

- **Chaos tools** (v. 7.x-1.4). A library of helpful tools by Merlin of Chaos. This library of the module Chaos is mandatory for other useful modules.
- **Media** (v. 7.x-1.4). A library for managing files and multimedia assets, regardless of whether they are hosted on your own site or a 3rd party site.
- **HTTP proxy** (v. 7.x-1.0). Provides an interface for configuring Drupal_http_request proxy settings.
- **Libraries** (v. 7.x-2.2). Allows version-dependent and shared usage of external libraries.
- **CKEditor** (v. 7.x-1.14). Enables CKEditor (WYSIWYG HTML editor) for use instead of plain text fields.
- **Views** (v. 7.x-3.8). It is used for managing and grouping Drupal content.
- **Views Slideshow: Cycle** (v. 7.x-3.1). Adds a Rotating slideshow mode to Views Slideshow.
- **jQuery Update** (v. 7.x-2.4): Upgrades the version of jQuery in Drupal core to a newer version of jQuery.
- **Superfish** (v. 7.x-1.9). Integrates jQuery Superfish plugin with our Drupal menus.
5 Browser compatibility / analytics

To maximise visibility the website was designed to render appropriately in all common web browsers on all common operating systems. These included various versions of the Firefox, Internet Explorer and Safari browsers on the Linux, Apple MAC OS X and Microsoft Windows families of operating systems.

To help understand the usage of the website, the website was registered with the open source analytics tool “AWSTSTATS”. This will allow rich reports to be run on the website, giving a very clear picture of information such as how many users are visiting the site, what links and pages are more popular than others, which countries are users coming from.

A summary of the information provided by AWSTSTATS is illustrated in Figure 4: Part of website statistics information (time of visits and visitor geographical distribution) below.
6 Conclusion

An initial version of the SmartResilience project website has been designed, provisioned and deployed on the internet. Consisting mostly of static content, it has been designed to quickly answer the key questions that external visitors to the website are expected to have. Various links in the website have also been considered at this early stage of the project, to cover collaboration, exploitation and dissemination requirements. As activities of the project become more clear and detailed more tools will be configured and enabled to support the project in all appropriate ways.

The project website will continuously evolve and develop as the project itself matures – the dedicated server provisioning solution gives the flexibility to choose the most appropriate tools and technologies to support the future needs of SmartResilience.
ANNEXES

Annex 1  Review process
## Annex 1  Review process

**Table 1: Points raised by reviewers and author’s response**

<table>
<thead>
<tr>
<th>Review</th>
<th>Response</th>
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<td><strong>Reviewer 1</strong></td>
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<td>Page 7: should rephrase the sentence &quot;intended to use be the SmartResilience partners.&quot;</td>
<td>Done</td>
</tr>
<tr>
<td>Page 9: The part about &quot;subscribe to our newsletter&quot; is cut between page 9 and page 10 and should appear as one paragraph in a single page</td>
<td>Done</td>
</tr>
<tr>
<td>suggestion: Section 3 whose title is &quot;organization of pages&quot; can be re-organized to a few subsections, and have a part about navigation and another part about social media. There is already text that describes the ease of navigation and the parts that relate to social networks. These existing text parts can be placed in dedicated sections.</td>
<td>This is a summary of the webpages. There is only one sentence (place of the social media links on the webpage) so the request is not clear.</td>
</tr>
<tr>
<td>I think some paragraph that describes Drupal in high level should be added, since it is the core/foundation/platform of the website.</td>
<td>Done at paragraph 4.1</td>
</tr>
<tr>
<td>AWSTATS has a GPL license which raises a general question- do we have any restrictions related to GPL software and code in our smartResilience project? In more detail: Are we allowed to use GPL software? Are we allowed to use GPL code? (which means that our code becomes GPL as well)</td>
<td>We are not distributing, but only using GPL software. GPL license, paragraph 2 is applicable and states &quot;[...] You may make, run and propagate covered works that you do not convey, without conditions [...]&quot;. Therefore, we’re allowed unrestricted use without conditions, as long as we don’t redistribute the website code to third-parties.</td>
</tr>
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