

### **Abstract**

This document contains the user requirements for Implementation Management and Auditing System (IMAS). This product is part of the Software Engineering Project (2IP35) at Eindhoven University of Technology.

The user requirements were established during several meetings with the customer of the  
15 project, ADVERSITEMENT. Increasingly, requirements were added, removed or modified.

The document complies with the User Requirements Document (URD) of the Software Engineering Standards, as specified by the European Space Agency (ESA)[2].

# Chapter 1

## Introduction

### 55 1.1 Purpose

This document will describe all user requirements that are considered for implementation in the final product. This initial requirements document should give an initial idea of what will be created and, maybe even more importantly, what won't be created.

### 1.2 Scope

60 IMAS is an application designed and developed by TEAM LOBSTER ECLIPSE for ADVERSITEMENT. The purpose of the application is to handle requirements and Relations for analytics tools between the requirements of a Marketing department, configuration of ADVERSITEMENT and the implementation details of the corresponding IT department.

### 1.3 List of definitions

ADVERSITEMENT	The company for which IMAS is constructed.
ADVERSITEMENT library	The ADVERSITEMENT script for a Client (s_code.js for ASC).
Admins	ADVERSITEMENT consultants
Analytics Software	The software used by Clients to gather and store the information about users of those Clients.
Analytics variable	A traffic or conversion variable or an event as used in the analytics software (such as ASC)
ASC	Adobe SiteCatalyst.
Client	A client of ADVERSITEMENT.
ESA	European Space Agency.
IMAS	IMPLEMENTATION MANAGEMENT AND AUDITING SYSTEM; the application that is produced.
Interface	The tool for looking at and interacting with Views.
Internal requirement	An internal representation on what (specifically) needs to be measured, and on which pages. This is deduced from a marketing requirement by ADVERSITEMENT.

IT	The IT department of a Client of ADVERSITEMENT.
Marketing	The marketing department of a Client of ADVERSITEMENT.
Marketing requirement	A desire of a Client to measure something (business requirement).
Model	The data stored in IMAS for a specific Project of a specific Client.
MySQL	A database management system.
PHP	Hypertext Preprocessor.
Project	A website of a Client.
Relation	The dependency between different data in the Model (for example, a translation between an analytics variable and a internal requirement).
SVN	Subversion.
URD	User Requirements Document.
User	A user of IMAS.
User Group	A group of Users with the same rights.
View	A perspective on the Model, thus a selection of relevant parts of the Model.

## 65 1.4 About ADVERSITEMENT

ADVERSITEMENT is a fast growing company that focuses on tracing user behavior on their Client's websites in order to measure and improve the effect of the advertisements and marketing campaigns on these websites. They closely work together with Clients that wish to gather the user behavior and marketing effectiveness information of their website. An important point in finding this information is that the right data are collected and are clearly and accurately presented to the end Users. Based on this information the Client may decide to change a marketing campaign or the navigation structure on a website to increase page visits and conversions.

## 1.5 Current methodology

75 Clients of ADVERSITEMENT use (for example) Adobe SiteCatalyst (ASC) to collect, measure and report the user statistics. ADVERSITEMENT collects requirements and wishes from the Client and work in cooperation with the Client to decide which User data is required and how this data will be collected. User data can be split into three categories. First there are the "view-data", which contain information about a specific page view of a single User of the Client's website. This data may, for instance, include the origin of the request (e.g. an online advertisement, a link on Facebook, a landing page or the site menu). This data is, for instance, very useful to get an indication of the navigation flow of Users through the web page. The collected data may also contain specific information about the User (e.g. age, gender and browser version) and about his or her previous visits to the site. The second category consists of "conversion-data", which are triggered by a certain event, for instance the completion of a purchase. This can be used to find information about, for example, the gender distribution for a certain product, which can then be used for targeted advertisement campaigns. Finally there are the "visitor-data", which consist of all information that is available about a certain User (or rather, a certain computer). This is mostly useful for long-term trends and the like.

90 The method described above is used to decide which data are necessary and for determining

a Relation from requirements to the variables that are needed to implement these requirements. These variables and their description are given to the IT department of the Client which should then make sure that this information is passed to the analytics script (which passes the information to analytics-software) on the right web pages. From these variables there  
95 is another Relation to the variables that can be used by the used analytics-software (like ASC). Of course much more information is involved in these Relations, like the data quality, a description of the used data format, et cetera. In the current working methodology a Microsoft Excel sheet is used to maintain these Relations and the accompanying information.

100 Apart from adding and maintaining these Relations there is also a need to test whether the correct information has been collected and whether this data is indeed usable to implement the Client requirements and wishes. These tests are currently created and run manually, which is a rather time-consuming and error-prone process. There is also often redundant data in the information contained in the Excel sheets which makes testing and maintaining the information even harder.

## 105 1.6 The assignment

Due to the issues mentioned above there is a need for a replacement system that makes adding and maintaining these Relations and their accompanying information easier and partially automates the process. IMAS could have the functionality to automatically generate a test suite to test an implementation based on the specification. IMAS could also have the functionality  
110 to generate (a part of) the ADVERSITEMENT library from the specification. To achieve these goals an application will be developed that serves as a drop-in replacement of the current usage of Excel sheets. This application will have a web Interface that should be usable by the ADVERSITEMENT consultants, and/or any other User that ADVERSITEMENT specifies. Because the Users are so diverse in their knowledge of and involvement in IMAS, not all Users  
115 should have access to all information. This means that there needs to be a robust security model and a change log that registers which Users have changed what and when. Uptime and reliability of IMAS are of course also desirable properties of the application. It is of course also important that IMAS is easy to use for everyone involved and that the User Interface allows for efficient and simple interactions.

120 Furthermore ADVERSITEMENT has some requirements regarding the programming language and environment that should be used to develop the application. IMAS has to be written in the scripting language PHP and IMAS should use a MySQL database.

ADVERSITEMENT will set up an SVN server for source control.

## 1.7 List of references

125 [1] COLEY consulting.

[2] ESA Board for Software Standardization and Control (BSSC). European space agency software engineering standards, February 1991. (ESA PSS-05-0 Issue 2).

## Chapter 2

# General description

### 130 2.1 Product perspective

The predecessor of IMAS is a set of handmade Excel files with a lot of redundancy. All these handmade files require a lot of time to maintain and are prone to errors. Our product is meant to replace these Excel files by an information system that is accessible via a web Interface. The implemented data views will eliminate the redundant storage and improve  
135 maintainability, while keeping and possibly improving consistency. The User Interface will or will not show certain functionality depending on the access rights of the User. The Interface should be based on the same layout for all Users.

IMAS supports for each Client different Projects. Each project is a website and contains a Model. The Model contains the data (such as the needed Relations between the requirements).

140 IMAS is supposed to handle the different Relations between the requirements. These requirements start usually with Marketing requirements, and could be translated by ADVERSITEMENT into Internal requirements. Those Internal requirements could be the same requirement as the Marketing requirement (such as collect the pageName), but could also be slightly different, when ADVERSITEMENT decides to standardize these requirements. If, for  
145 example, two different Clients wants to measure the same data, but express that in different Marketing requirements, then ADVERSITEMENT can decide to translate those Marketing requirements into the same Internal requirement. Those Marketing requirements and Internal requirements are then translated into Analytics variables. These variables are the specific implementation details for the IT department.

150 The system should be highly extensible, allowing for easy introduction of new Relations for new clients or analytics tools. ESA-standard[2] documentation about the Project process and product itself, including a User manual, will be delivered to ADVERSITEMENT during the Project and when the IMAS PROJECT is finished.

### 2.2 General capabilities

155 IMAS consists of several components, each of which has several capabilities.

### 2.2.1 Users

Each User of IMAS has a User account. The different Models of Clients will also be stored in IMAS. Several dependencies between the Models can be added, modified and removed. Users can be created and managed by Administrators. A User using IMAS can see relevant Relations (only those specified in the User access control). IMAS should provide the Administrators with features to manage Users and access control.

### 2.2.2 Interfaces

There are a number of different Interfaces, for example an Interface for ADVERSITEMENT, one for the Client's IT group, and one for the Client's Marketing. ADVERSITEMENT will have the option to add or remove views and interaction to the interface of a user/usergroup. These three example Interfaces are described below. In actuality, the system can allow User Groups to inherit Interfaces from other groups.

#### The ADVERSITEMENT Interface

The ADVERSITEMENT Interface supports adding Users and modifying Business requirements. In addition it supports viewing/modifying the variables used by the analytics tool, and their meanings. A meaning consists of a description, and a short name, for example "age". Each Analytics variable can be marked with a status; e.g. "implemented", where the corresponding version of the ADVERSITEMENT library can be entered. For every Analytics variable they can attach a status; e.g. "data not received", "data received correctly". IMAS should provide a site-graph section as well. This section should show a graph which the User can modify. The graph models paths that can be used for testing. Each node represents a group of pages which are grouped together based on the Analytics variables that will be tested. A list of these variables will be shown and it will be made clear to which node these variables belong. For each of these variables there should be a pattern which it needs to conform to. (E.g. : the variable should be an integer, or conform to a certain regular expression.) Furthermore IMAS should provide the functionality to export data and view changelogs. IMAS could provide the functionality to automatically generate the JavaScript snippets that need to be put on the Client's website.

#### The IT Interface

The IT Interface should support viewing the Analytics variables, and their meanings. IT can mark each Analytics variable with a certain status, e.g. "implemented", "out of scope" or some other text. Furthermore IMAS should provide the function to export data and view changelogs. IMAS could provide the functionality to automatically generate the JavaScript snippets that need to be put on the client's website.

#### The Marketing group

The Interface of the Marketing only supports viewing reports and overviews. They can however indicate whether they agree with requirements after an acceptance test.

### 2.2.3 Relations between data

In IMAS there should be consistency between different views, e.g. the information shared between the Marketing requirements, Internal requirements and the Analytics variables should be consistent. ADVERSITEMENT can build Relations between, for example, Internal requirements to previously defined Marketing requirements. Those requirements can have Relations with Analytics variables. Analytics variables have Relations with the documentation of the ADVERSITEMENT library, which implements the actual Relations in a script. The system will allow a hierarchy of Analytics variables to enhance modularity. The relevant Analytics variables (best-practice variables) can be set per Model. Any submodel will inherit the best practice variables of the parent model and can extend these with own best-practice variables. Requirements of Models, which are grouped on a certain type, can be shared in new Models. For example, if a certain Model has requirements related to Finance, these can be tagged and re-used in similar Models. Within the system a certain Client can have multiple Models, including hierarchical extensions of higher level website Models.

When the system is edited, change-log entries will be added to the change-log relevant to the Model. In addition, the Admins can create report suites linked to different Client's and corresponding websites.

### 2.2.4 Site-graph

IMAS allows the User to construct a site-graph representing the web analytics implementation. This site-graph will contain information about groups of pages and relevant Analytics variables as nodes. An edge in this site-graph means that it is important that the link between these groups is tested. This means that a consultant of ADVERSITEMENT should test if the correct data is gathered if he takes this path on the website in question. IMAS can generate page groups and basic Models with relevant Analytics variables based on such a site-graph. After making a site-graph IMAS allows ADVERSITEMENT to add information to added basic Models. Also IMAS can add and modify information for the several Interfaces.

### 2.2.5 Website

IMAS will provide several features to the Users by means of a website. The web Interface must at least be functional on browsers that support HTML 5.

### 2.2.6 Import/export tool

It would be desirable that the existing Excel Project files can be imported into IMAS. This allows for Excel documents to be converted to a new representation in the database. For those Client's that prefer the Excel, or an alternative, representation of the Interface, a feature will be implemented to export the views from the Interface. It will at least be possible to export the data as PDF.

### 2.2.7 Generating test suites

IMAS should be able to generate test cases from the site-graph. A test case is a detailed description of which pages must be visited and which outputs are expected. The test cases are combined within a test suite. According to the standards of ADVERSITEMENT, such a

test suite must cover all edges and all nodes in the site-graph at least twice, where for each variable at least two different values are tested. This should lead to a test suite that is not incredibly large, such that ADVERSITEMENT can execute the tests in the test suite in at most a few man days.

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## 2.3 General constraints

IMAS must have security features and be maintainable. In general it should be possible to add new Relations, edit them or remove them with ease. For example a Relation of the Marketing requirements to Analytics variables, which can be used to implement the Marketing requirements in various analytic tools.

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IMAS must have the possibility to roll back changes in some way. IMAS should provide this functionality either by an undo option or by a backup option. These rollbacks/backups should be separate for all Client's, such that reversing the modifications for one Client does not influence those of another.

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IMAS should have enough safety features to counter standard attacks, such as MySQL-injection, login brute forcing and XSS. Furthermore IMAS should only make data available for the specified Users. Finally, a simple and clear Interface should make IMAS intuitively usable for the different Users.

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The system does not need to take into account any failures on the side of the Client's of ADVERSITEMENT or analytics tools used.

## 2.4 User characteristics

This section will address the different User Groups of IMAS and the main purpose the application will have for them. The application User Interface may be specialized for a specific User Group. A User may have more rights than the group he or she is a member of. ADVERSITEMENT should have the option to add and remove User Groups from IMAS.

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### 2.4.1 Marketing

The Marketing department of a Client will communicate their requirements to ADVERSITEMENT. The marketeers can use IMAS to view the implemented data logging features, but typically do not have any other rights. This is because most marketeers are only interested in reports, overviews etc. They don't need access to any technical information, such as implementation-specific data.

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### 2.4.2 IT

The IT department of a Client makes sure that the ADVERSITEMENT script gets the right input values, according to the specification. IMAS gives a simple overview of the required input values, as well as a description for each of them. The IT department can also define the websites that must be incorporated in their Project, and optionally ignored IP addresses for each website.

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### 2.4.3 Admins (ADVERSITEMENT consultants)

The Admins typically have access to all features, and may also be involved in many Projects.  
270 ADVERSITEMENT consultants can grant read and write permissions for specific functionalities to the different Users.

## 2.5 Environment description

IMAS will run on a server provided by ADVERSITEMENT. The server will contain the data needed for this application. A web application will run on top of the data. This web application  
275 can be accessed from outside as well as inside the ADVERSITEMENT network. Several kinds of different User Groups can be defined, such as the ADVERSITEMENT Users, IT Users and Marketing Users. The ADVERSITEMENT Users can access IMAS from inside as well as from outside the ADVERSITEMENT network. IT and Marketing Users will usually access IMAS from outside the ADVERSITEMENT network, since they work at physically other companies.

280 Since the Users may be from different countries, IMAS can be viewed in several languages (initially English and Dutch, but adding languages should be easy). The system could be filled with data through the website. For the adoption of the system, an import tool will be constructed if time allows. This import tool will fill the system with already existing data. An export tool can be constructed for Users that wish to view the data in a different manner.

## 2.6 Assumptions

This section contains a list of assumptions that TEAM LOBSTER ECLIPSE and ADVERSITEMENT agreed on.

- ADVERSITEMENT will take care of infrastructure (server, internet connection, etc.) to host the website/database.
- 290 • The Relation for the variables used in the analytics tools must be changeable. However, it does not have to be taken into account that Users might be changing variables a lot and in that way create unusable data. To maintain usable data is the User's own responsibility.
- 295 • ADVERSITEMENT will provide the "business requirements" and translate them to config requirements in the system.

## Chapter 3

# Specific requirements

In this chapter all requirements and constraints of the product to be developed are specifically stated. The product will adhere to these requirements. Furthermore any requirements  
300 resulting from additional requests are included here.

For prioritizing the specific requirements for test, the MoSCoW model[1] will be used. The capital letters in MoSCoW stand for:

M *Must have*; these requirements are essential for the product.

S *Should have*; these requirements are not critical for the product to work, but are nearly  
305 as important as the *must haves*, meaning they must be implemented if at all possible.

C *Could have*; requirements which are not critical to the product's success. If they can be implemented with little development costs, they can increase the Clients satisfaction.

W *Would have*; these requirements will not be implemented in this Project. However, they would be nice to have in future versions of the product.

### 3.1 Capability requirements

#### 3.1.1 Authentication requirements

<b>UCR AUT 5</b>	<i>must have</i>
A user shall have an account.	
<b>UCR AUT 10</b>	<i>must have</i>
Every account has a set of rights associated with it.	
<b>UCR AUT 15</b>	<i>must have</i>
IMAS demands the user to log in with the correct credentials to use any functionality.	
<b>UCR AUT 20</b>	<i>must have</i>
IMAS only allows the user to use parts of the system he is authorized to.	
<b>UCR AUT 25</b>	<i>must have</i>
IMAS allows a user to be a member of a group.	
<b>UCR AUT 30</b>	<i>must have</i>
Every group has a set of rights.	

<b>UCR AUT 35</b>	<i>should have</i>
A User Group can inherit rights from other groups.	
<b>UCR AUT 40</b>	<i>must have</i>
Personal user rights are stronger than user group rights.	
<b>UCR AUT 45</b>	<i>must have</i>
IMAS allows Admins to create User accounts.	
<b>UCR AUT 50</b>	<i>must have</i>
IMAS allows Admins to grant rights to a user.	
<b>UCR AUT 55</b>	<i>must have</i>
IMAS allows Admins to revoke rights of a User.	
<b>UCR AUT 60</b>	<i>must have</i>
IMAS allows Admins to grant rights to a User Group.	
<b>UCR AUT 65</b>	<i>must have</i>
IMAS allows Admins revoke rights of a User Group.	
<b>UCR AUT 70</b>	<i>must have</i>
IMAS allows Admins to reset the password of a user.	
<b>UCR AUT 75</b>	<i>should have</i>
When a user password is reset, IMAS will send the password to the user's e-mail address.	
<b>UCR AUT 80</b>	<i>must have</i>
Credentials for an account will consist of an e-mail address and a securely stored password.	
<b>UCR AUT 85</b>	<i>must have</i>
A password must be at least 8 characters long and consists of alphanumeric characters.	
<b>UCR AUT 90</b>	<i>should have</i>
IMAS will validate the e-mail address of a user by sending an email to the address after registration which contains a link with a verification code.	
<b>UCR AUT 95</b>	<i>must have</i>
IMAS allows an Admin to (temporarily) disable an account.	
<b>UCR AUT 100</b>	<i>should have</i>
IMAS allows users to reset their password.	
<b>UCR AUT 105</b>	<i>must have</i>
IMAS logs user account activity (logging in, registering, password changing).	
<b>UCR AUT 110</b>	<i>must have</i>
IMAS allows change logs to be viewed by Admins.	

### 3.1.2 Data modification requirements

<b>UCR DM 5</b>	<i>must have</i>
Each project can have a tag which can be used to group similar Projects together. E.g. "financial".	
<b>UCR DM 10</b>	<i>must have</i>
IMAS allows users with right "AddProjects" to add Projects.	
<b>UCR DM 15</b>	<i>must have</i>
IMAS allows users with right "ModifyProjects" to modify Projects.	
<b>UCR DM 20</b>	<i>must have</i>
IMAS allows users with right "RemoveProjects" to remove Projects.	

<b>UCR DM 25</b>	<i>must have</i>
IMAS allows users with right "AddRelations" for Project X to add relations between data of Project X.	
<b>UCR DM 30</b>	<i>must have</i>
IMAS allows users with right "ModifyRelations" for Project X to modify relations between data of Project X.	
<b>UCR DM 35</b>	<i>must have</i>
IMAS allows users with right "RemoveRelations" for Project X to remove relations between data of Project X.	
<b>UCR DM 40</b>	<i>must have</i>
IMAS allows users with right "ModifyRequirement" for Project X to add a short and long description to every requirement of Project X.	
<b>UCR DM 45</b>	<i>must have</i>
IMAS allows users with right "ModifyRequirement" for Project X to add a customer description to every requirement of Project X.	
<b>UCR DM 50</b>	<i>must have</i>
IMAS allows users with right "CheckRequirement" for Project X to change the requirement status (i.e. implemented or not implemented) of Project X.	
<b>UCR DM 55</b>	<i>must have</i>
IMAS allows Admins to see different Views: Configuration, IT and advertisement library.	
<b>UCR DM 60</b>	<i>should have</i>
IMAS makes sure users see a warning when he changes something that results in possible inconsistency.	
<b>UCR DM 65</b>	<i>must have</i>
IMAS allows users with right "ModifyRelations" for Project X to specify which analytics tool will be used for the given relation in Project X.	
<b>UCR DM 70</b>	<i>must have</i>
IMAS allows users with right "ModifyProjects" to specify how many variables (i.e. requirements) will be used as "standard" within a project.	
<b>UCR DM 75</b>	<i>must have</i>
IMAS allows users with right "ModifyRelations" for Project X to specify additional variables (i.e. requirements) for each different relation in Project X.	
<b>UCR DM 80</b>	<i>must have</i>
IMAS allows Admins to see changes done in the system in the change logs.	
<b>UCR DM 85</b>	<i>must have</i>
IMAS allows Admins to see in the change logs which person made the change.	
<b>UCR DM 90</b>	<i>must have</i>
IMAS allows Admins to make backups of the system	
<b>UCR DM 95</b>	<i>should have</i>
IMAS allows (re-)store backups for individual clients	
<b>UCR DM 100</b>	<i>could have</i>
IMAS allows Admins to undo individual actions done in the system	
<b>UCR DM 105</b>	<i>must have</i>
IMAS allows Admins to rollback changes.	

<b>UCR DM 110</b>	<i>must have</i>
A log entry contains information on what was changed.	
<b>UCR DM 115</b>	<i>must have</i>
A log entry contains information about when something was changed.	
<b>UCR DM 120</b>	<i>must have</i>
A log entry contains information about who changed something.	
<b>UCR DM 125</b>	<i>must have</i>
IMAS allows users with right "AddGraph" for Project X to construct a site-graph for project X.	
<b>UCR DM 130</b>	<i>must have</i>
IMAS allows users with right "ModifyGraph" for Project X to modify a site-graph for project X.	
<b>UCR DM 135</b>	<i>must have</i>
IMAS allows users with right "RemoveGraph" for Project X to remove a site-graph from Project X.	
<b>UCR DM 140</b>	<i>must have</i>
IMAS allows users with right "ModifyGraph" for Project X to add a node to a site-graph for Project X.	
<b>UCR DM 145</b>	<i>must have</i>
IMAS allows users with right "ModifyGraph" for Project X to add a edge to a site-graph for Project X.	
<b>UCR DM 150</b>	<i>must have</i>
In a site-graph, every edge points from a node and to a node.	
<b>UCR DM 155</b>	<i>must have</i>
A node in the site-graph contains a list of analytics-variables.	
<b>UCR DM 160</b>	<i>must have</i>
IMAS allows users with right "ModifyGraph" for Project X to edit a site-graph of Project X in a visual editor.	
<b>UCR DM 165</b>	<i>must have</i>
Each project has a set of Analytics-variables.	
<b>UCR DM 170</b>	<i>must have</i>
It should be possible to inherit certain set of Analytics-variables from another project.	
<b>UCR DM 175</b>	<i>must have</i>
It should be possible to set a format for each Analytics-variable which it should be conform to (e.g. a regex).	
<b>UCR DM 180</b>	<i>could have</i>
A part of the JavaScript that will be put on the ADVERSITEMENT his website can be generated per page(-group).	

### 3.1.3 Data viewing requirements

<b>UCR DV 5</b>	<i>must have</i>
IMAS allows Admins to view all data (i.e. all relations and requirements that occur in IMAS).	

<b>UCR DV 10</b>	<i>must have</i>
IMAS restricts users to only view the data he/she has access to for the project he/she is involved with.	
<b>UCR DV 15</b>	<i>could have</i>
IMAS allows users to see the system in different languages.	
<b>UCR DV 20</b>	<i>should have</i>
IMAS will have a Dutch and English language to start with.	
<b>UCR DV 25</b>	<i>could have</i>
IMAS allows Admins to add languages to the system.	

### 3.1.4 Test suite requirements

315 IMAS must be able to generate a test suite that covers the site-graph. The test suite consists of several test cases, which on their own are detailed descriptions of traces of actions that can be taken on the customer website.

<b>UCR TS 5</b>	<i>must have</i>
IMAS can generate a test suite which covers all edges and all nodes (in the site-graph) at least twice.	
<b>UCR TS 10</b>	<i>must have</i>
IMAS can export a generated file of the generated test suite.	
<b>UCR TS 15</b>	<i>should have</i>
IMAS will generate "minimal" test suites, so it won't generate an exhaustive test suite, but a test suite that conforms to the other requirements with some "minimal" notion of number of test cases.	

### 3.1.5 Test case requirements

320 A test case is a part of a test suite. The test case provides a detailed description of the steps to be taken on the customer website.

<b>UCR TC 5</b>	<i>must have</i>
A test case contains the fields: description, URL and name.	
<b>UCR TC 10</b>	<i>must have</i>
A test case contains a list of inputs and expected outputs for every parameter.	

### 3.1.6 Import/export tool requirements

<b>UCR IET 5</b>	<i>could have</i>
Source files can be in the CSV format.	
<b>UCR IET 10</b>	<i>could have</i>
Source files can be in the XLS(X) format.	
<b>UCR IET 15</b>	<i>could have</i>
IMAS allows users with rights "AddRelations" and "AddRequirement" to import data from a source file.	

<b>UCR IET 20</b>	<i>could have</i>
IMAS will verbosely show status information about the importproces.	
<b>UCR IET 25</b>	<i>could have</i>
IMAS will show a report on which data was imported succesfully and which data was not.	
<b>UCR IET 30</b>	<i>could have</i>
The imported data will be converted to the internal representation when this is possible (otherwise, it won't import the data).	
<b>UCR IET 35</b>	<i>should have</i>
IMAS allows users to export user views to a document format.	

### 3.2 Non-functional: constraint requirements

<b>UCR CON 5</b>	<i>must have</i>
IMAS should be scripted in the most recent version of PHP (that is, version 5.3.11).	
<b>UCR CON 10</b>	<i>must have</i>
Database used for IMAS should be MySQL (that is, version 5.5.23).	
<b>UCR CON 15</b>	<i>must have</i>
The client side of IMAS should support modern browsers.	
<b>UCR CON 20</b>	<i>must have</i>
IMAS should not allow users or outsiders that do not have a permission to view information they are not supposed to.	
<b>UCR CON 25</b>	<i>must have</i>
IMAS should not allow a non-Admin User or an outsider to break the system in such a way that it becomes unavailable to other users.	
<b>UCR CON 30</b>	<i>should have</i>
IMAS should have an intuitive interface (i.e. an interface which can be explained in a reasonable amount of time).	

### 3.3 Non-functional: performance requirements

<b>UCR PER 5</b>	<i>must have</i>
Each page in IMAS should load reasonably fast.	
<b>UCR PER 10</b>	<i>must have</i>
IMAS should be able to handle up to fifty concurrent users.	