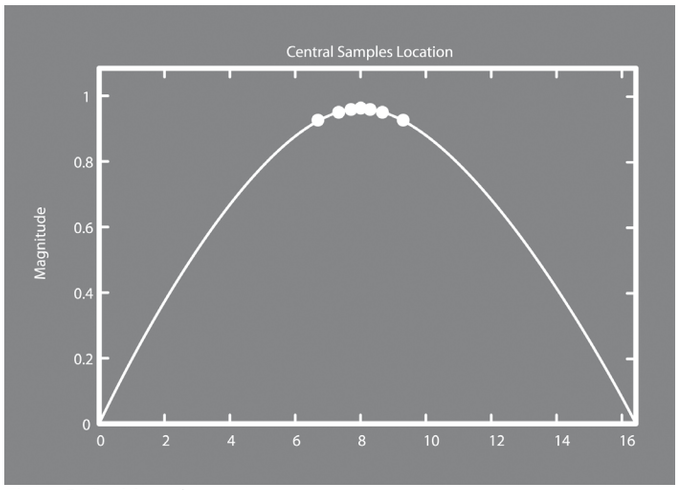

Figure 3. Position of central samples.

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AN INTRANET FOR ISO 9001:2000 STANDARD MANAGEMENT

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Abstract—*The aim of this project was to develop a dynamic environment in order to manage and control all the aspects related to the standard ISO 9001:2000. It's based on an Intranet that uses an associated database to store all the relevant data. The company staff is able to access the Intranet by entering their username and password (which are previously encrypted to protect their personal information) and they can create, modify or delete (depending on their profile) different kinds of data stored in the system. There are many useful functions, such as making specific queries amongst the data, monitoring the status of the different projects or performing surveys to evaluate the employees' and student's satisfaction. Although the system is currently finished and active, new functionalities are constantly being developed and added as they are required.*

Keywords— ISO 9001:2000; dynamic environment; Intranet; Web Languages (PHP, JavaScript, CSS); MySQL database; user profile; data queries.

I. INTRODUCTION

The ISO 9001:2000 is part of the ISO group of standards, and its requirements are meant to improve the company's Quality Control system, in order to satisfy the clients' needs and expectations. Having an ISO 9001 certificate gives the client a guarantee on the quality of the services that the company has to offer, so having a useful environment to manage the different aspects of this Quality Control system turns out to be a very important matter.

The SARTI group obtained the ISO 9001 certificate in the year 2004, and uses a software-based system to carry out the management. Although it was pretty good at the beginning, it soon turned to be a very static application, and the need of having more functionalities ended up with the project of developing a system of our own.

The decision of developing an Intranet for this purpose was taken based on the advantages against a regular application. The most important is that there is no need for any specific software to be able to enter the system, just an internet navigator. This makes the system much more accessible, because the users can enter the Intranet from any computer which is connected to the Internet. It will be easier to control the access to the system too, as it will only consist on developing a login interface and giving each user a username and password. It also turns the design tasks more flexible, being able to show the data in many different ways.

At this time, the Intranet has all the sections needed in order to manage every part of the ISO 9001 requirements. Despite that, it is constantly being improved with new kinds of queries, views or links between data, in order to make its use faster and more efficient.

II. DESIGN

One of the most important features that had to be improved was the interconnection between data. The user had to be able to jump between related elements, such as a client and its related projects, or the students that belong to a course, etc. Due to this fact, the main structure of the database has been designed in order to satisfy that requirement. All the tables that store important elements have an 'id' field that identifies them, and the information of this field will be used in every other table that needs to be associated with that element, by generating an external key.

The other main requirement was to add more useful functionalities to the system, such as implementing a way to monitor the status of projects, services, purchases, etc., to be able to add new versions of this elements and, at the same time, keep a history of the old ones, to relate the different incidences that may occur to the elements that produce them, etc. The database has been designed considering all of these requirements, in order to make the system much more dynamic than before.

Besides from the data treatment, there was another huge aspect to bear in mind in terms of design, which was the creation of profiles to be assigned to the users of the Intranet. Depending of this profile, they will be classified as:

-Administrators: can read, create and modify all kinds of data, including the information about users.

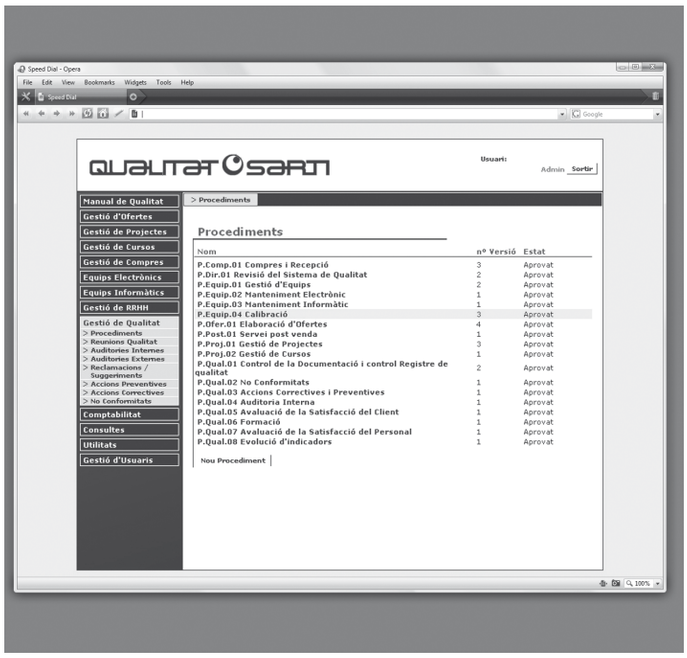

Figure 1: final look of the Intranet design

-Users: can read, create and modify the data.
-Consultants: can only read the data, not create it nor modify it.

Amongst the Users (the most common profile) sub-profiles are defined such as 'Purchases, 'Projects', 'Training', 'Human Resources', etc. that specify which parts of the Intranet they can access. Finally, their login information (username and password) is previously encrypted before sending it through the Internet, in order to protect it from possible intrusions. More concretely, it is encrypted using the SHA1 and MD5 algorithms.

III. IMPLEMENTATION

The implementation of the Intranet has been carried out using the PHP web language. This, combined with the use of JavaScript functions, allows us to create a dynamic environment, with many links joining related elements of the system and numerous queries to the database to select any necessary registers.

At present, the Intranet has the following main sections:

-Quality Manual: all the information about us and our Quality system.
-Service Management: with information about clients, petitions and services.
-Project Management: project monitoring and their revisions.
-Course Management: with all the students, professors, courses and surveys performed.
-Purchase Management: with suppliers and requests.
-Equipment: information about all kinds of equipment available, related to computers and electronics.
-Human Resources: all the staff, data about their training and the satisfaction surveys.
-Quality Management: audits and its results, claims, suggestions, preventive or corrective actions.
-Accounting: information about invoices etc.

Almost every section mentioned before has its own "queries" subsection, which lets the user search for specific data depending on numerous factors. Moreover, some of them have the 'issues' subsection, where they can store the problems they find. Finally, the administrators can access the "User Management" section, where they can create or modify the information about the users of the Intranet and change their profiles, in order to modify their access to different sections.

IV. FUTURE IMPROVEMENTS

As we mentioned before, new features are added to the Intranet as we continue using it and discovering new necessities that have to be solved. One of the most important ones is to create printing templates for the data pages, so things like equipment specifications or the details of a service can be printed with the correct format in a fast and easy way. We will add an Adobe PDF converter, in order to store that information into a file. In addition, new data queries, variations in displaying information and other minor improvements can be carried out under user demand in order to have an optimal interface.

V. CONCLUSIONS

As a conclusion, we can say that the main objective of the project has been accomplished. At present, the Intranet is much more useful than the previously used software. It's easier to use, faster, and more dynamic than before. Switching between related elements is now a simple task, making the interface more intuitive.

There are more options now too, such as queries for searching specific elements, monitoring projects and making an associated history, purchase revision, satisfaction surveys, etc. All these features were not on the previous system, and make all the requirements of ISO 9001:2000 easier to control and accomplish.

There is also more access control than before, with the user profiles and subprofiles helping to protect the contents and to know who is responsible for any changes that could be made.

With all these improvements and the future ones, we can finally have a system that is actually useful and makes the tasks related to the Quality Control system easier.