DOORS: A Tool to Manage Requirements

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There's nothing remarkable about it.
All one has to do is hit the right keys at the right time
and the instrument plays itself.

Johann Sebastian Bach, composer, 1685–1750

9.1 Introduction

Systems engineers and managers need the right instruments to assist them with the requirements management process. A variety of tools currently exist. This chapter presents an overview of one of these tools – DOORS (Version 7.1). DOORS (Dynamic Object Oriented Requirements System) is a leading requirements management tool used by tens of thousands of engineers around the world. The tool was originally created by QSS Ltd, Oxford, and is now developed and marketed by Telelogic.

DOORS is a multi-platform, enterprise-wide requirements management tool designed to capture, link, trace, analyze and manage a wide range of information to ensure a project's compliance to specified requirements and standards. DOORS provides for the communication of business needs, allows cross-functional teams to collaborate on development projects to meet these needs and enables one to validate that the right system is being built, and is being built right. The views provided by DOORS on the screen provide a powerful familiar navigation mechanism.

Throughout this chapter reference will be made to a case study for a family sailing boat.

9.2 The Case for Requirements Management

Today, systems engineers require effective requirements management in order to provide solutions. Requirements management is the process that captures, traces and manages stakeholder needs and the changes that occur throughout a project's lifecycle. Products, too, are becoming more complex, to the point where no individual has the ability to comprehend the whole, or understand all of its constituent parts. Structuring is by far the best way of organizing requirements, thus making them more manageable in terms of omissions or duplicate information. Hence requirements management is also about communication. For that reason,

it is important that requirements are communicated correctly, thus ensuring that team collaboration is enhanced, project risk is reduced and the project meets its business objectives. If requirements are well managed, the right product will get to market on time, on budget and to specification.

9.3 DOORS Architecture

For any application, the requirements and related information can be stored in a central database in DOORS. This database can be accessed in a variety of ways and exists throughout the lifetime of the application. The information in a DOORS database is stored in modules (Figure 9.1). Modules can be organized within the database by using folders and projects. A project is a special kind of folder that contains all the data for a particular project.

DOORS *folders* are used to organize data and are just like folders in a computer file store. Folders may contain other folders, projects or modules. Folders are given a name and description and the ability for users to see or manipulate the data in a folder may be constrained using access controls.

DOORS *projects* are used by a team of people to manage a collection of data relating to that team's work effort. The project should contain all of the data related to the requirements, design, development, test, production and maintenance for an application. The project provides the capability to manage users and their access to the data in the project, to back up the data and to distribute portions of the data to other DOORS databases.

DOORS *modules* are containers for data sets. Three classes of module exist:

- *formal* – the most frequently used type of module for structured sets of like information;

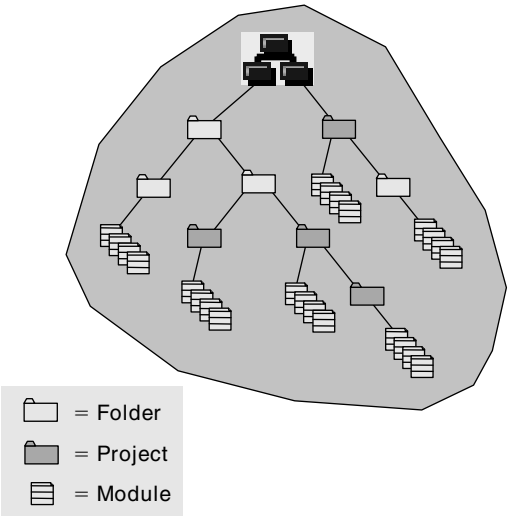

Figure 9.1 DOORS database structure.