Visure
the requirements company

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IRQA General Information:

Requirements Definition and Management

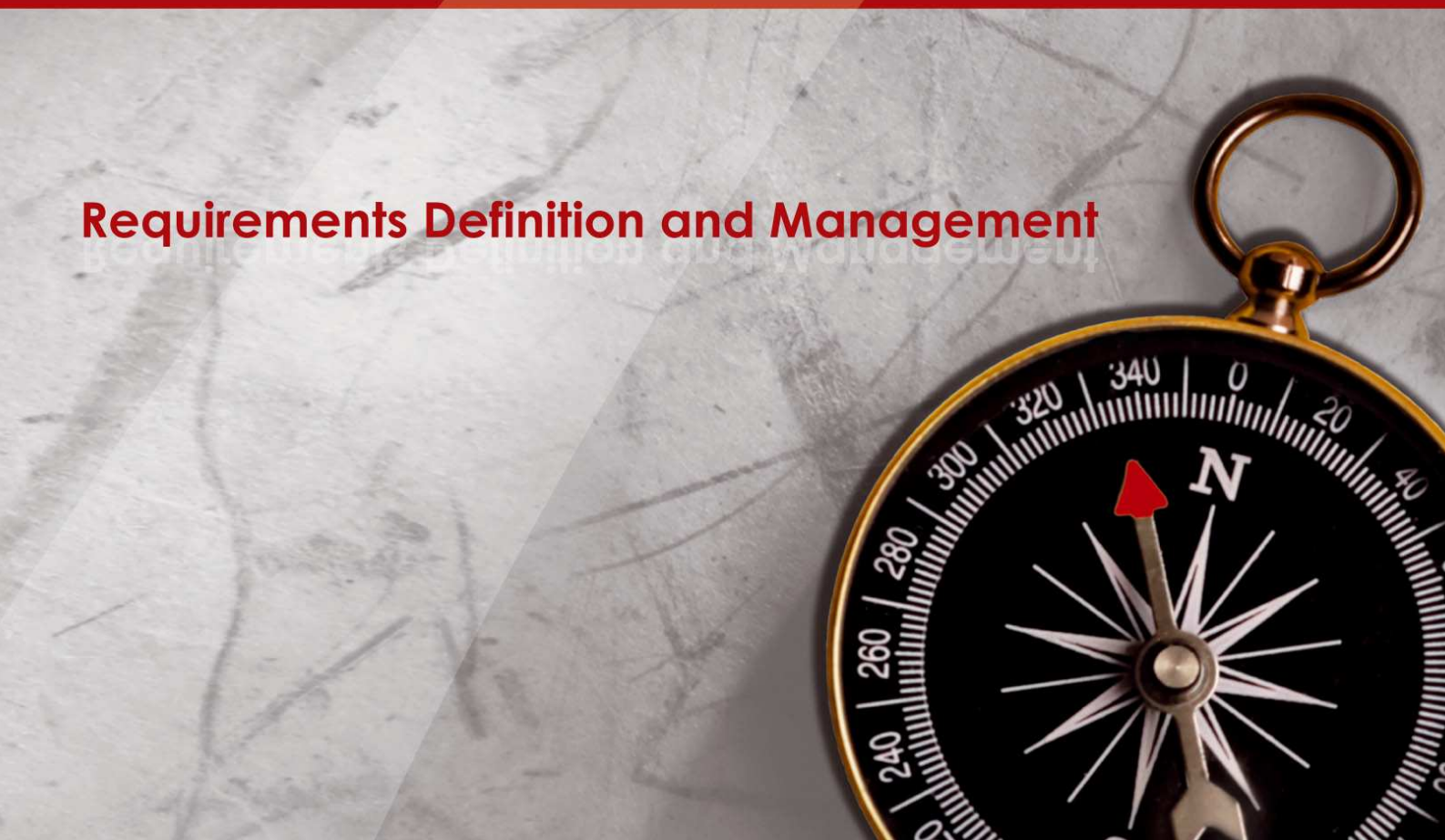
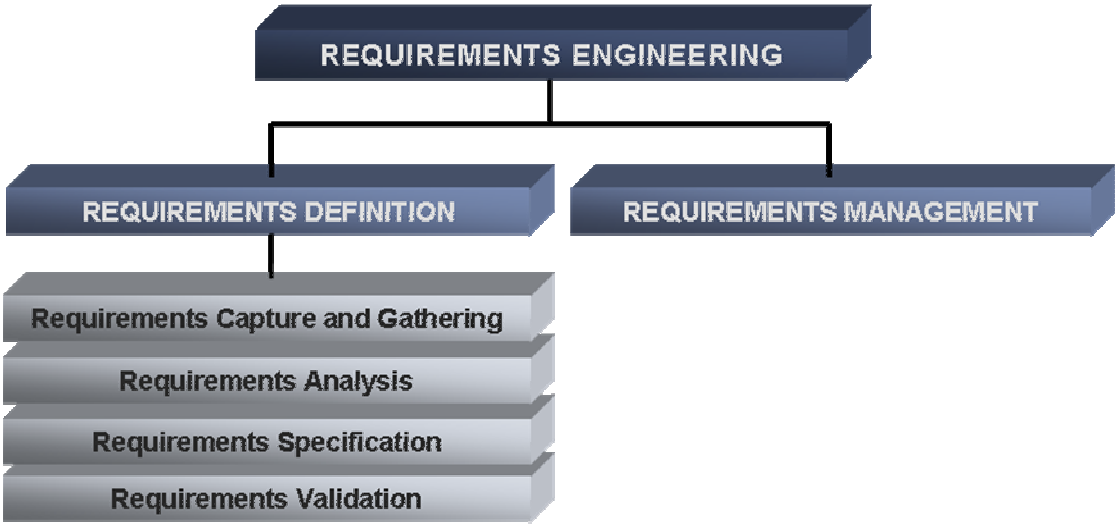


TABLE OF CONTENTS

INTRODUCTION

IRQA is the Requirements Management and Definition tool, specifically designed to visually support all the activities related to requirements.



KEY DIFFERENTIATORS

1. Flexibility to visually support multiple end-to-end processes and methodologies in Software and Systems Engineering

The **block diagrams** reflect visually the elements and the relationships in the process so they can be understood by everybody, including management and marketing, and allow establishing a collaborative environment for all the users, who can easily understand, follow and participate in the defined process, enforcing the process.

IRQA supports several artifacts other than requirements, including **Use cases and tests** natively in the tool in order to be able to support the different activities in the RDM process:

- Requirements **gathering**, **capture**, **analysis**, **specification**, **verification** and **validation**.

Workflows allow to align the processes and the tools, enforcing the elements lifecycle.

All the artifacts along with the block diagrams and workflows allow users to define and follow from very simple to highly complex Requirements processes **in just one single tool**.

Examples of processes or activities from Software and Systems engineering that can be followed in IRQA:

- **CMMI** level 2 and 3
- **Spice**
- Tender management processes (RFI, **RFP**, etc.)
- **Ad hoc** processes
- **Agile** methodologies
- Product validation

2. Low implementation time and user orientation

IRQA can be easily **localized to the different languages**, which is in most cases critical for the user acceptance (Currently in English, Spanish, German, Chinese, French and Italian).

The **Document view** allows engaging all users in the system (even the non-technical ones), reducing the learning curve, but keeping at the same time a defined chapter structure.

The tool can be quickly **configured for the different roles**, creating and sharing user views to increase the user acceptance.

All the capabilities in IRQA are provided **out-of-the-box**, which means that the configuration and adoption time is short.

The defined processes as well as project and user configuration can be included in **project templates** which will replicate the complete structure whenever starting a new project.

Reusability of components (requirements, services, tests, attributes and relationships) enable reduced rework and cost and better quality.

The powerful filtering capabilities (export, baselines, blocks, etc.) allow a quick access to the elements in the repository saving time.

3. Powerful architecture, and use of "standards"

IRQA repository can be based on **commercial databases**, including Oracle, SQL Server and Ms Access This allows to benefit of:

- Existing DBA processes i.e. backup processes
- High performance
- Database replication i.e. for distributed teams

Light Web Client (**IRQANET**) with pure HTTP or HTTPS access (no need to open ports).

IRQA uses **many other standards** that make it an "integrated tool":

- XML: XRI for Requirements; XMI for Modeling
- MS SCC: for Configuration Management tools
- ODBC, TCP/IP, HTTP, etc.

4. Openness and integrations

IRQA provides many **out-of-the-box integrations**.

IRQA provides an **Integration Platform** which can be used to integrate with third party tools, or even proprietary tools to extend the change impact analysis features to elements out of the scope of IRQA, and link requirements with the rest of the activities of the lifecycle.

IRQA provides a very powerful and open **API for commercial languages**, including COM and Java. This API is very easy to use, as it is using a commercial language, is very well documented, and can be used by customers or

partners to build integrations with proprietary tools and extract metrics. Should not be used to extend the functionality, as IRQA provides all the necessary features for RDM, and shouldn't be used to tailor or configure the application, as this can be performed by each user through the GUI.

5. Requirements communication and distributed teams support

- The **import and export** process in IRQA supports the customer-supplier relationship in the different sectors, as well as the possibility to implement a distributed environment process.
- The import and export process can also be used for an **offline work**, blocking the original elements at the original project.
- Depending on the sector, different **exchange formats** can be used to perform this round-trip exchange:
  - MS Word/Excel for Tender Management and Software development
  - XRI (XML for Requirements Interchange) for Automotive and Aerospace
- IRQANET is a purely **HTTP/HTTPS web client** which allows users access the requirements information through the Internet.

DETAILED FUNCTIONALITIES

	Benefits	
Requirements Elicitation		
Manual and automatic capture from MS Excel, MS Word and Outlook	IRQA allows capturing requirements from different origins, customer documents, offline work or other offices. The powerful importation mechanism identifies which requirements already exist in the database and which ones exist but with modifications in attributes and description allowing the selection of the elements that will be finally imported. This importation mechanism along with the export mechanism allows interchanging requirements to other companies (suppliers, customers, etc.)	✓
Automatic capture of XRI (XML for Requirements Interchange)	Captures from XML documents allow the interchange of requirements on an organized format. XRI is supported by others requirements tools so along with the export capabilities, XRI allows to establish and maintain a mechanism to exchange requirements with other companies that may use a different requirement tool	✓

Requirements description with RTF format and relationships with external files in local folders or in SCM tools	Apart from describing requirement with OLE objects, tables and graphics, requirements usually have attached external information.	✓
Requirements Hierarchy	To describe requirements clearly and deeply hierarchical relationships are highly recommended.	✓
Automatic code configuration	It is possible to configure the element's (requirements, tests, use cases) codification at user or repository level	✓

Requirements Analysis

Problem Domain Model (PDM) building: It is possible to describe business concepts textually and graphically through class diagrams, E/R diagrams and sequence diagrams.	Before starting with the system's specification it is needed to understand the business and to be able to represent the Problem Domain Model based on a set of concepts and the relationships between them.	✓
Contextualize requirements with the Problem Domain Model	Once defined the PDM, the next step will be to extract and trace requirements from it.	✓
Behavior Model based on Use case diagrams, Scenarios and Sequence diagrams	Those diagrams will represent in a semiformal way the needs of the customers beyond a textual description	✓
Requirements Traceability	Traceability between different types of requirements including the motive (type) of the relationship and the direction.	✓
Organize the model based on different criteria	Once the first elements of the specification have been created it is possible to organize them based on different criteria allowing the analysts to identify duplicated or inconsistent elements	✓

Solution specification

Actors identification (External Entities)	IRQA comes with a specific support to the identification and specification of external elements that will interact with the system	✓

Services identification (High level functionalities)	Once the user requirements have been identified, it is possible to represents the system high level functionalities that will be implemented to solve those requirements.	✓
Automatic capture of services from MS Excel and MS Word	IRQA allows to import not just requirements but also use cases	✓
Modeling of the relationships between the system and the external entities and textual and graphical description of the services. Use Case diagrams, DFDs, Sequence diagrams, state diagrams.	The functional analysis of the system can be performed into IRQA as a requirements related activity, before the design step	✓

Validation of the Specification

Traceability between actors, services and requirements.	The traceability between specification's elements will allow us to perform easily a complete and deep change impact analysis	✓
Specification Check	Once the traceability have been established the user can check easily with a simple click which requirements are not covered by functionalities or which functionalities haven't been asked for	✓

Verification and acceptance tests

Definition of a Fit Fit-Criteria for requirements	Each requirement must be verifiable and the validation criteria available for everyone.	✓
Definition of acceptance tests	The definition of acceptance tests is a key part for the requirements process success as an activity directly involved with requirements	✓
Automatic capture of acceptance tests from MS Word and MS Excel	IRQA allows to import not just requirements but also acceptance tests	✓
Traceability between tests scenarios and requirements or services	Acceptance tests allow the verification of requirements and the specification of high level functionalities. Additionally, this traceability will allow to perform a more reliable change impact analysis as it is possible to visualize the whole set of elements affected by the change.	✓

Integration with HP TestDirector/Quality Center	If you are using a test tool like HP Quality Center, IRQA allows importing acceptance tests. Through this integration you can perform the change impact analysis into IRQA but manage the tests in a powerful test tool like HP QC.	✓
Validation matrix	This matrix will allow you to not just to evaluate the impact of failed tests but also to check which requirements are not covered by tests and which tests are not traced to requirements.	✓

Requirements Management

Unlimited number of user defined attributes	When creating an attribute it is not just possible to define the scope of the attribute but also to define the type of the attribute (and additionally, create new types)	✓
Mandatory Attributes	It is possible to define attributes as mandatory for certain types of elements, for example, the priority, forcing the user to introduce a value for that attribute	✓
Filters	Users can define and create filters based on any predefine field (creation/modification date, author, etc.), attributes, relationships, etc.	✓
Grid views defined by the user	IRQA allows to switch with a simple click to different users views depending on the activity you are going to perform (list of elements, hierarchy o elements, list by attributes, relationships view, document view, etc.).	✓
Views share	It is possible to save the views and restore them later with a simple click. Additionally, views can be shared with other users allowing new users to have an specific interface for their role	✓
User-defined requirement process and traceability rules by means of block diagrams	Block diagrams graphically represents the elements and their relationships in the process, making it easier to understand and easier to follow for all users (especially those non-technical). This diagram allows establishing a collaborative environment for all users encouraging them to follow the process and giving helps for that purpose (like restricting the available relationships based on the diagram).	✓

Workflows	Enumerated attributes may be assigned to workflows making it possible to define the available transitions and which users groups may perform those transitions. Additionally, IRQA allows to attach VBScripts to the transitions to execute actions like: - Send emails - Inherit attribute based on the requirements status - Accept or reject a requirement base don the associated tests status - etc.	✓
Version management	The configuration management of elements allows to establish access mechanism for every single requirement. Each requirement will have a history with all the available versions that they users may check and compare.	✓

Requirements traceability

Traceability Matrix	The IRQA traceability matrix allows representing in rows and columns any type of element allowing to apply filter for both. This matrix represents not just the relationships between elements but also the suspect relationships.	✓
Relationships between requirements	These relationships allow defining the relationships' type, direction, if the relationship is suspect and the suspect's reason that can be introduced automatically or manually.	✓
Relationships between user requirements and services	These relationships can be also suspect, so the change impact analysis will also cover the use cases.	✓
Relationships between requirements and business concepts	Relationships between those types of elements help users in the elicitation stage, gathering requirements from the business in which the system will be implemented.	✓
Relationships between requirements and acceptance tests	This relationship I key and it is fully supported into IRQA for checking the test coverage, change impact analysis and requirements verification.	✓

Indirect traceability matrix	This special traceability matrix allows representing elements which are not directly related but indirectly through their relationships with intermediate elements. Using this matrix the user may check, for example, how a failed test is affecting a customer requests through the user requirements which are the intermediate element between tests and customer requests	✓
Suspects relationships	Suspects relationships can be established automatically when an element is modified; in that case the suspect reason is fulfilled automatically. Additionally, analyst can set a relationship manually to suspect, in that case the reason is fulfilled Support to suspect relationships allow us to simulate a change so we can check the impact of a change before performing it.	✓

Project management

Access Partitions and User Management	IRQA allows creating elements containers and assigning different rights over user groups to those containers. These rights include the read and write rights over the elements contained in the container. The access over elements is performed at element level, which means that a user only need to block the element over he/she is working allowing other users to access to other elements of the container or the specification. It is even possible to assign different rights over an element and its attributes, for example, a user may have write rights over a requirement but only read rights over one of its attributes or no visualization rights at all over another attribute.	✓
Integration with User management tools: Active Directory, LDAP, NT.	Beside IRQA users it is also possible to integrate with a user management tool and import sets of users from those Tools, helping to manage the users in a more efficient way.	✓
Graphical representation of domains and blocks	Block diagrams represent the different types of elements in the specification (type of requirements, type of use cases, type of tests, etc.) and the relationships between them. Domain diagrams allow representing subsystems. Each element (requirement, use case, test, etc.)	✓

	can be assigned to one, various, or none subsystem.	
Navigate through the specification using the block and domain diagrams	IRQA allows navigating and activating each of the blocks and domains so users may work only with the corresponding elements contained in those blocks or domains.	✓
Multiple specifications in domain and blocks	Users can define as many diagrams as points of view are needed to define the system specification. For example, besides representing the different types or subtypes of elements, block diagrams may be used to represents the different components of the system, and the domain diagrams could represent the company department beside the subsystems.	✓

Report generation

Predefined reports	IRQA comes with 25 predefined reports available for all users, including lists of elements, traceability reports, etc.	✓
User defined reports	The report manager allows creating new reports including metrics, statistics, graphs, and any other type of analysis. These reports may use templates to fit the report to any type of corporate standard.	✓
Several formats supported: HTML, PDF, DOC, XML, XLS, CSV, etc.	The reports may be, once generated, exported to several external formats.	✓
Corporative reports	All the reports created by the users can be placed in a specific folder making then available for all other users adding them automatically to the list of corporative reports in the report menu into IRQA	✓
Automatic generation of reports	Besides manual reports execution it is possible too the report generation to a batch process. This can be used to automatically generate reports periodically with specific formats and leave them in a specific location/folder. Some users may check these reports without connecting to the tool.	✓

Reusability support

Components sharing	From the sets of reusable components defined by IRQA users, users can chose to reuse them in share mode. This mode allows visualizing the component's elements in the target project in read only mode, but with the possibility of assign attributes and modify those attributes to the reusable elements When a new version of the reusable component is available, the project reusing that component will receive a notification to evaluate the new version and decide when (or if) updating	✓
Components Copy + Link	This mode (copy link) allows visualizing and modifying the components. When a new version of the reusable component is available, the project reusing that component will receive a notification to evaluate the new version and decide when (or if) updating	✓
Components Copy	This mode reuse the elements creating a copy of the element in write mode, losing all reference to the original element.	✓
Updating reusable components	Once received the notification of a new version of the component, users can check the changes in the new component (new elements, changed elements, etc.) before performing the updating so they can take the decision with all the needed information	✓
Partitionable components	When users publish new components for other projects they can define the component as partitionable. For partitionable components users in target project can decide if take all the elements of the component or only a subset of them. For a non-partionable component all the elements must be taken when reusing it. This allows having a better control when reusing elements.	✓

Configuration Management

Generation of total or partial Baselines	IRQA fully support baselines so Project administrator can take snapshot of all the element (total baseline) or set of elements (partial baseline) of the Project in a given moment.	✓

Baseline comparator	Once created, users can compare two different baselines to check deleted elements, new elements, and modified elements in a very intuitive and visible way. Additionally relationships between elements can be also compared.	✓
Electronic signature on baselines	When creating a baseline, administrators can select if it needs to be signed by certain users. Those users can sign the baseline in the tool, add their comment, accept the baseline under certain conditions or reject the baseline.	

Integrations with other tools

Integrations with Configuration Management tool SCC compliant: Microsoft Visual SourceSafe, Merant PVCS, Seapine SurroundSCM, Rational ClearCase, etc.	This integration allows attaching files under SCM control to specification's elements	✓
Integration Platform	Any user can build new integrations with proprietary or commercial tools easily with this platform support	
Plug-In support (available on July 2009)	Through this new functionality users can create their own plug-ins and put them into IRQA, allowing them to create new toolbars, buttons, new columns, calculated attributes, integration with third party tools, etc.	✓
Integration with other requirements tool through XRI import/export	This interchange mechanism allows not just exchange information with other RM tools but also migrate old data from old IRQA repositories	✓
Integration with IBM Rational Software Architect and IBM Rational Software Modeller	Requirements from IRQA become available in a new perspective created for eclipse that allows you to trace them with RSA/RSM elements. Additionally, elements from RSM may be exported to IRQA to perform a complete change impact analysis	✓
Integration with Sparx Enterprise Architect	Requirements from IRQA are synchronized with EA requirements so they can be the starting point for the design step	✓
Integration with Rational Rose	Through this integration it is possible to see the requirements from IRQA into Rational Rose and	✓

	also export the services from IRQA to Rational Rose	
Integration with Artisan Studio	Requirements and services can be exported and synchronized with ARTiSAN Studio as the starting point to the design stage. Through this integration it is possible to use standards like SysML available for this tool.	✓
Automatic Capture from MS Office (MS Word, MS Excel, MS Outlook)	IRQA integrates with several MS Office tools (Excel, Word, Outlook, Project) to perform automatic captures from several origins	✓
Direct exportation to MS Excel and MS Word	Available from the IRQA interface, this functionality allows to export sets of requirements in a WYSIWYG way	✓
Integration with HP TestDirector/Quality Center	This powerful integration allows to synchronize tests cases between IRQA and QC.. Requirements can also be send to QC from IRQA along with the traces between requirements and tests and between requirements and requirements . Finally, those traces can also be imported from QC to IRQA	✓
Integration with MKS Integrity Manager	Through this integration it is possible to create Issues and change requests directly from IRQA , trace them with requirements and update their attributes.	✓

COMPATIBILITY

System Requirements

The system requirements for installing and running IRQA are the following::

- PC Pentium (minimum) with 1GB. Of free disk space.
- RAM: 1GB (2GB recommended). To manage big repositories and projects 2GB are required.
- OS:
  - ✓ Microsoft Windows 9X (only clients).
  - ✓ Microsoft Windows NT 4.0 Service Pack 6.
  - ✓ Microsoft Windows 2000.
  - ✓ Microsoft Windows XP.
  - ✓ Microsoft Windows Server 2003.

  If using Windows NT, 2000, XP o 2003, Administrator Rights are required to install IRQA.
- Browser: Microsoft Internet Explorer 4.01 SP2 or higher. A web browser is needed in order to visualize online tutorials, help files and the administrator guide.
- Network Requirements. These requirements only apply if you are using a license Server and network clients:
  - License server must be installed on a Windows NT, 2000, XP or 2003 OS.
  - It must be a TCP/IP connection between the license server and the IRQA clients.
- Depending on the database Engine used, it will be necessary::
  - ✓ For SQL repositories: SQL Server 7.0, 2000, 2005.

- ✓ For ORACLE repositories: ORACLE 9i, 10g, 10g2 (Express version is not supported).
- ✓ For MS ACCESS: It is not needed MS ACCESS installed on the computer.

Types of license

First of all, a license is needed to run the IRQA Client. Additionally, another license is needed to run the administration tool so two licenses are needed if both applications want to be run simultaneously. The license used by the administration tool will be the same as the one used for the IRQA client

There are two kind of licenses available, users must chose between them depending on their available infrastructure and the usual utilization of the tool. Each license required a different installation (see Type of Installation).

Node-locked license

This license allows to execute IRQA client and the administration tool in one computer. The license is fixed to that machine. Usually these licenses are used by computer not connected to a network, for example, laptops.

This license is attached to the installation of a ***local client***.

Floating license

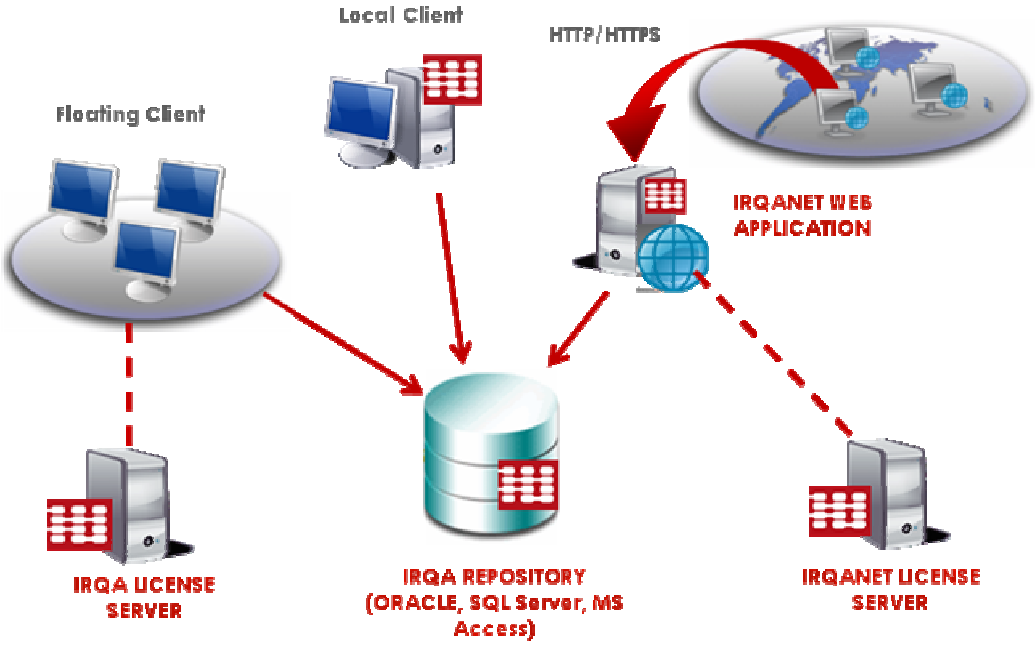
This license allows to execute IRQA client and the administration tool in one computer. During the execution of IRQA the floating license is reserved, but once the execution is finished the license is free to be used by another user.

These licenses are supplied by a license server and used by IRQA Client that will be connected to that server.

Usually, a license Server will have N floating licenses, which means that only N clients can be run simultaneously,

These licenses is bounded to the installation of a **License Server** and at least one **IRQA Client** (**connected to a network**)

The following image illustrates the differences between both licensing modes:



Types of installation

There are to types of installation in IRQA::

- **Local Installation:**. The local client of IRQA is installed.
- **Network Installation:**. A license Server is installed along with one or more IRQA client.

Local Installation

A local client will be installed. A node locked license will be needed for this installation. Selecting this type of installation the tool will be only available from the computer where you installed it.

This type of installation is recommended when::

- The computer where IRQA will be installed is not connected to any network.
- You are installing IRQA on a laptop.

Network installation

For a network installation the following will be needed:

- A license server
- At least one IRQA client.

Each client will need a floating license to be executed. Those license are served by the License Server.

When using a node locked license a License Server is not needed. When installing IRQA you can chose to do it in network mode or in local mode.

When installing the IRQA license Server a new service will be registered in the system called "IRQA License Server" This services must be running in order for the License Server to work.

Every computer with an IRQA client installed in network mode may connect to a license Server to get a license.