Technology
Transfer Centre

CISE **Semantic**
Interoperability Centre

Quick Guide

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1 INTRODUCTION

The **Technology Transfer Centre -CTT**, according to its name in Spanish- publishes a general directory of solutions to promote their by all Public Administrations. The CTT is the response to Article 158 of **Law 40/2015**, of October 1, on the Legal Regime of the Public Sector and Article 17 of **Royal Decree 4/2010,** of January 8, which regulates the **National Interoperability Scheme** in the field of electronic administration. Its main objectives are:

- Create a common **repository** of solutions for reuse in Public Administrations, with their source code if open-source conditions are applicable, their associated documentations, the license conditions of their assets, and reusability costs if any.

- Create a common **knowledge base** on the various technical solutions in the field of e-Government.

- Create a space to **share experiences** and cooperate to promote the development of common applications, formats, and standards under the national schemes of interoperability and security.

A reserved space in GitHub facilitates the collaborative development of public administration applications. Any administration can publish its open software project and create a development community around it.

Besides, the CTT hosts the **Semantic Interoperability Centre -CISE**, according to its name in Spanish. The CISE is the instrument defined in the **National Interoperability Scheme** to publish the data models that allows to exchange information between Public Administrations and between them and citizens. Its main objectives are:

- Identify **data models** and their **semantic assets** considered as of common interest.

- Provide a **repository** of data models, semantic assets and associated documentation to be collected, classified, published, located and disseminated.

- **Facilitate public sector interoperability** by publishing the data models of its information exchange services so that such information can be automatically processed by applications not involved in its creation.

The **CTT** and the **CISE** are available to any public administration and any profile working in the e-Government environment.

2 HOW DOES IT WORK?

The CTT/CISE functioning is based on two fundamental aspects: **the solutions and the access levels**. The <u>solution</u> is the basic unit of working around which all the offered functionalities are orchestrated. The different <u>access levels</u> enable the customization of information and services offered by each solution to each user.

2.1 WHAT IS A SOLUTION?

A **solution** is a set of documents, files, news, information pages and services. Conceptually, solutions can be:

- **Horizontal services** made available to all public bodies to facilitate or simplify the implementation of new services**.**

- **Developments** whose source code and associated information is made available to other public administrations so that it can be used or improved.

- **Semantic assets,** data models for either an information exchange service or a semantic standard, which are relevant for public administrations. These solutions are the aim of the CISE.

- Any **technological project** where the experience of its implementation and use is available so that other public bodies can benefit from it.

- **Recommendations, regulations, methodologies, etc.** of application in the ICT field for public administration.

For each **CISE solution** -a **semantic asset**- two tabs are always publicly available via internet with the next information:

- **"General" tab.** Presentation page of a data model that is relevant for the public sector. This presentation contains the general concepts of the solution and the main data of interest, as its classification. This general information is articulated in the main area "Description" and, like other CTT solutions, in two areas "News" and "Subscribe".

- **"Semantic Components" tab**. This page offers the semantic components that describe the data model, grouped by version. Each version may have three types of elements:

  o **Main semantic component** contains files with the main semantic definitions of the data model.

- o **Secondary semantic component** contains files with semantic definitions used by the main semantic components, such as lists of values for certain elements of the main semantic component.

- o **Documentation:** includes documents, guides and examples that explain the main and secondary semantic components.

In the remaining solutions, each **CTT solution** provides public information via Internet along several tabs:

- **"General" tab.** This is the solution's presentation page that contains the general concepts of the solution and the main information of interest, such as how to use the solution, the applicable license or the contact information. In addition, the following are available:

  - o **News.** Public news related to the solution.

  - o **Subscriptions.** Email subscription options to keep you informed of news and changes in the download area.

- **"Additional Info" tab.** Delves into the functional and technological details of the solution.

- **"Download area" tab.** Different downloadable public contents organized by folders. In the case of distributable code, confirmation of acceptance of the licensing conditions may be requested.

- **Other tabs.** Responsible for the solution may enable the use of 2 other public tabs to provide more information, indicators, access to mailing lists, etc.

In addition, each CTT solution can offer registered users of public administrations **accessing through the SARA network:**

- **"Download Area" tab.** Additional contents to those already present, for anonymous users that are specific for Public Administrations.

- **"Collaboration" tab.** Participation in discussion forums about the solution.

- **Other tabs.** Responsible for the solution can enable the use of 2 other tabs to provide more information, indicators, access to mailing lists, etc.

In any case, a solution has a **maximum of 5 active tabs.**

For any solution, a **collaborative open-source development project** may be enabled in the **CTT Forge** space on GitHub as a repository. These repositories may enable, according to their needs, the next functionalities:

- **Source code area.** Management of the project code through a GIT repository. This repository is the working environment and is under development and in continuous evolution, therefore, there may be incomplete materials and software with defects pending to be solved.

  The preferred place to provide the official and stable versions of the project including source code, installation documents, integration, etc. is the Download Area of the associated CTT solution.

- **Incident Management**. Notification, evolution, and resolution of all requests related to each project can be managed: service incidents, support requests, enhancement requests, system resolution, etc.

- **Wiki**. Collaborative creation and management of project documentation.

In addition, those projects can request the creation of **distribution lists** in the CTT infrastructure if need it. These lists facilitate coordination and collaboration among the different actors and users. The list service is available at:

h[ttp://listas-ctt.administracionelectronica.gob.es](http://listas-ctt.administracionelectronica.gob.es)

3 HOW TO ACCESS?

The **CTT/CISE solution directory** is the right place to find a technical, semantic, or informative solution to reuse in your administration. This directory is available at the Spanish State portal about e-Government known as **PAe**.

Technology Transfer Centre (CTT) is available at:

http://administracionelectronica.gob.es/ctt

Registered semantic assets -data models- are available at **https://administracionelectronica.gob.es/ctt/semanticosTodos.htm**. Besides, semantic solutions can be found and registered by accessing the main page of the **Semantic Interoperability Centre (CISE)**:

http://administracionelectronica.gob.es/PAe/CISE

Although the CTT/CISE can be accessed through the Internet and the SARA Network, in the case of public administrations it is recommended to use the SARA Network because this is the only way to access to all the information and specific services for public administrations.

The **CTT Forge** organization, created within the large public collaborative environment of GitHub, for public administrations to create and manage their open-source repositories, is available at:

https://github.com/ctt-gob-es

The CTT Forge organization is recognized in GITHUB as a public sector space:

https://government.github.com/community/

3.1 HOW ARE USERS ORGANIZED?

Users can participate at different levels and with different permissions in accessing and managing the solutions, both in the PAe and in the GitHub CTT Forge. PAe and GitHub users are totally independent.

The **PAe** differentiates between 4 types of users with a different level of participation within the portal and each solution.

- **Anonymous visitor.** Users who only wants to consult general public information about CTT/CISE solutions. This user does not need to identify him/herself and has access from Internet and from the SARA network.

- **Registered PAe visitor**. Users who have a greater interest in an active PAe participation: expressing their opinion, participating in forums, communities, etc. A PAe registered user can be from any public or private domain via Internet or, in the case of users from the public sector, via the SARA network.

- **Registered visitor of the PAe of the Public Administrations**. These are registered PAe visitors who work for a Public Administration. These users will have greater levels of access to PAe functionalities and services. Specifically, in the case of the CTT/CISE accessed through the SARA network, they have more participation options available, especially highlighting the specific content that is downloadable only by public administrations.

- **Solutions administrator**. A user with profile "registered visitor of the PAe of public administrations" can request the creation of a new CTT/CISE solution thus becoming the administrator of such solution. The administrators of each solution are responsible for managing its contents, users, etc. and can only perform this administration from the SARA network. A solution can have several administrators.

ANONYMOUS VISITOR AND REGISTERED PAE VISITOR	REGISTERED VISITOR OF THE PUBLIC ADMINISTRATIONS AND SOLUTION ADMINISTRATOR
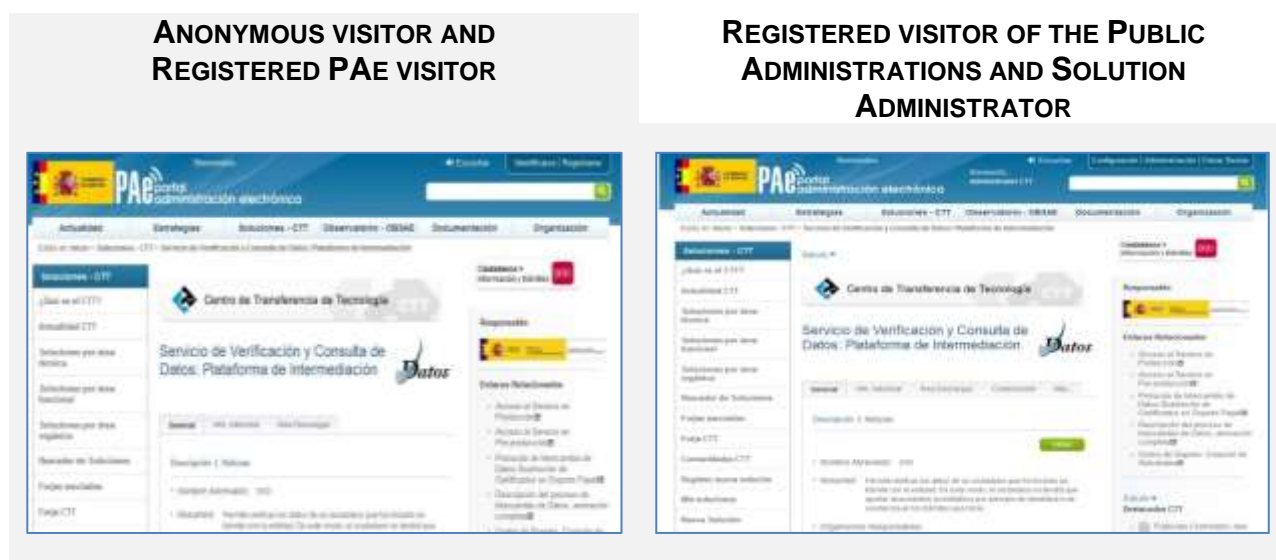
Figure 1- Views of a CTT solution depending on the type of user

The **CTT Forge** environment on GitHub is designed to encourage open participation from any public and private domain. It differentiates 4 types of users:

- **Anonymous visitor**. This user does not need to identify him/herself and can access the public information of the repositories, including downloading the source code.

- **GitHub registered visitor**. This user has a greater interest in actively participating in the collaborative development of some of his/her repositories.

- **GitHub Repository Administrator in CTT Forge**. A GitHub registered user may be granted with administration permissions for a specific repository. The repository administrator is responsible for managing its contents, users, tools, etc. and especially for controlling who can contribute to the code repository under what criteria. A repository can have several administrators.

- **Contributor in GitHub repositories in CTT Forge.** The repository administrator manages the associated collaborators, deciding the level of participation (role) of the user. The administrator determines the different actions that can be performed on the repository. The administrator can assign a new contributor three different roles to adapt to different cases: Administrator, Read and Write.
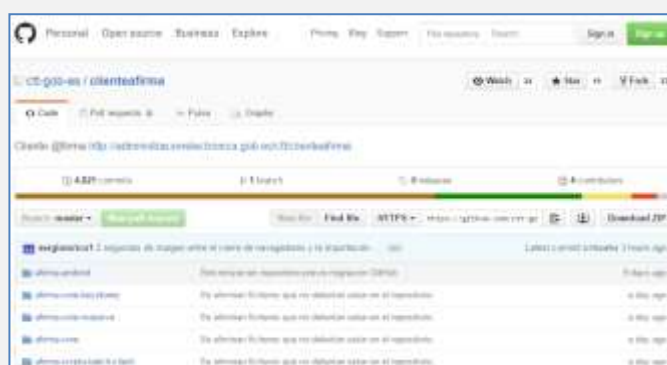
ANONYMOUS VISITOR	REPOSITORY ADMINISTRATOR
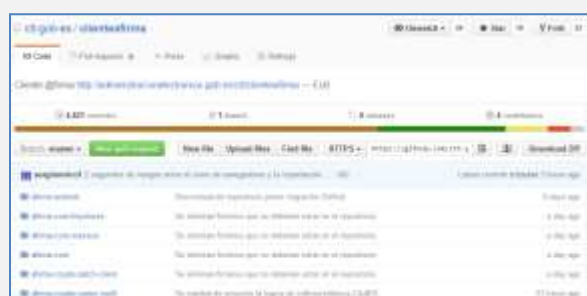
Figure 2- Views of a solution on GitHub depending on the type of user

3.2 HOW TO REGISTER?

The registration process must be done from the "Register" option of the PAe header.
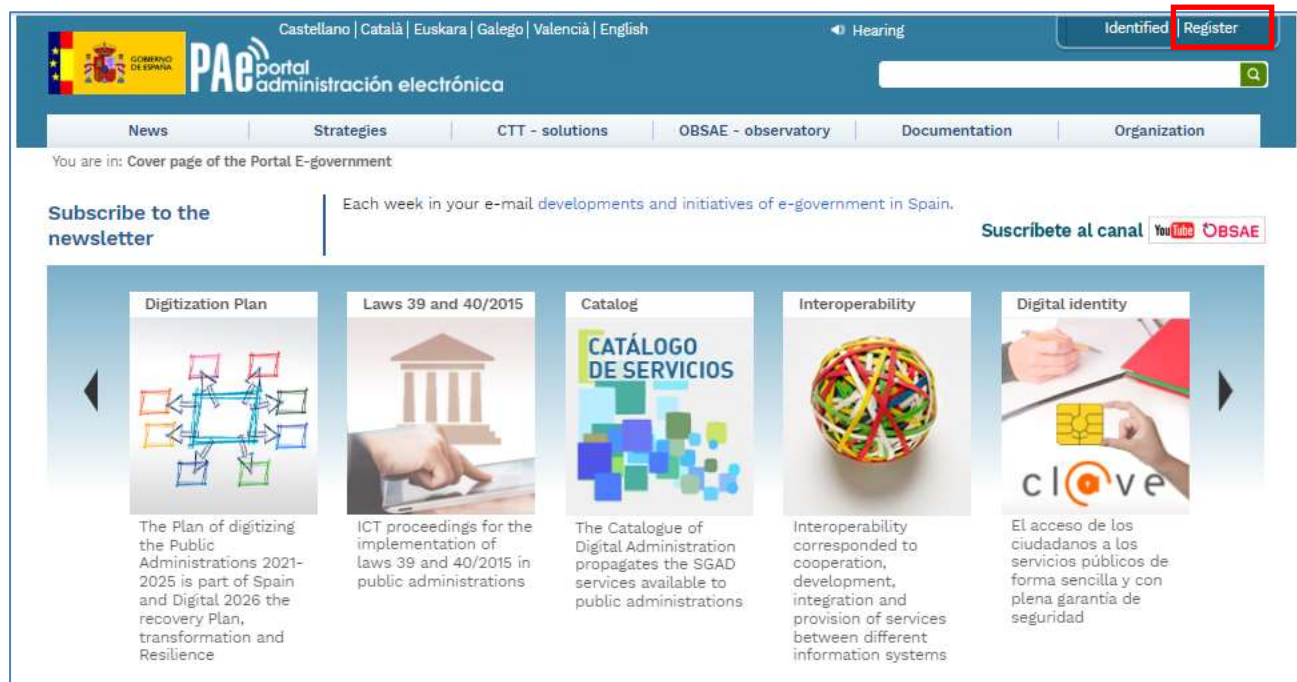
Figure 3- User registration in the PAe

If you want to obtain the profile **"Registered PAe Visitor from Public Administrations",** during the registration process you must indicate that your profile is "Administration". Besides, the e-mail address provided must belong to a Public Administration. The PAe managers shall periodically supervise new user registrations and grant the "PAe registered visitor profile" in the appropriate cases.

Figure 4- User registration form

To obtain a user account on GitHub, you only need to open the **https://github.com/ctt-gob-es** link, click on the **"Sign Up"** button, and fill out the application. You will receive an email indicating that your user is operational in GitHub, when approved.

Figure 5- GitHub user registration form
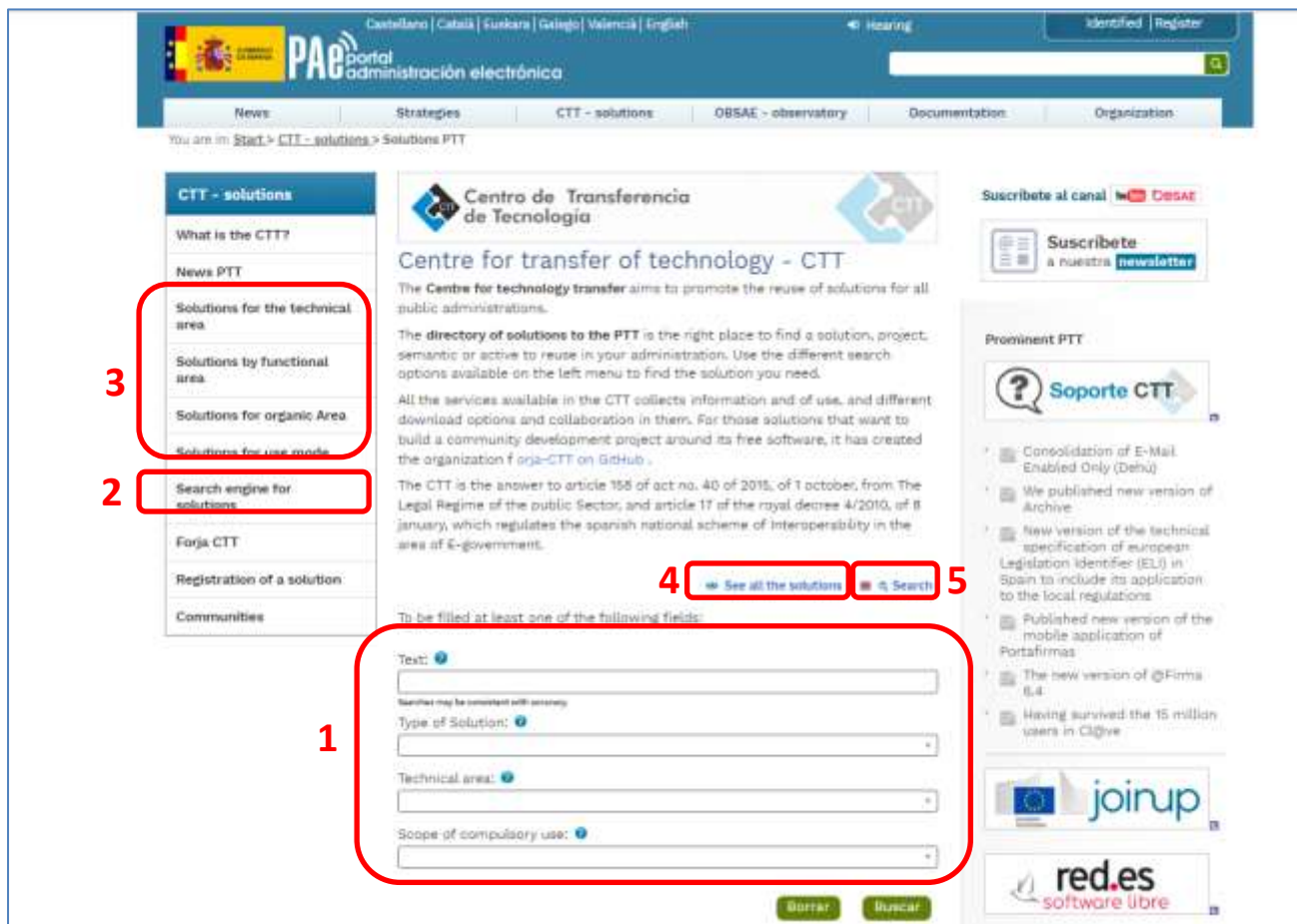
4 HOW TO FIND A SOLUTION?

There are several options to find a solution to reuse in a public administration.

4.1 CTT SEARCH ENGINES

There are several possible ways to find a solution in the [CTT solution directory](#):

- **Simplified solution search engine (1).** It allows searches by key words, type of solution, technical area or scope of mandatory use, which are the options most frequently used by users.

- **Solution search engine (2)**. It allows to jointly use search options by keywords and by classification and characteristics of the solution. For example, you could search for all the solutions related to signature (text=signature) and provided as horizontal services (technical classification=horizontal services for Public Administrations).

- **Solutions by .... (3)**. It facilitates access to solutions grouped by different simple criteria. For example, Solutions by Technical Area allows to find all the horizontal services made available to other administrations to promote e-Government.

- **Complete list of solutions (4)**. It allows access to a complete list of solutions registered in the CTT/CISE in alphabetical order. The link is available at the top right of the central area of the page.

- **Searches in English (5).** The simplified solution search engine (1) and the solution search engine (2) allow you to search for solutions described in English.

Figure 6- Searching solutions

The solution search engine (2) and the simplified solution search engine (2) include a predictive search option that allows anticipating the results desired by the user. Once a minimum of 3 characters have been entered, a list is offered with the solutions whose "Short Name", "Abbreviated Name" or "Full Name" contains these characters. In addition, a direct access is offered without completing the search request.

Figure 7- Predictive search

If the search is finally executed, it looks up for the entered words within any field shown at the general tab of the solutions. Each solution that matches will be displayed only once in a result list that will be shown at the central part of the screen, along with the applied search filters that are shown at the right part of the screen. It is possible to select new filters, deactivate the selected ones, or view all the available filters by clicking on the "view more filters" option.

Figure 8- Applied filters

Results found can be sorted according to 2 criteria:

- **Quarterly ranking** of the most downloaded solutions in the previous quarter (most downloaded first).
- **Date of the last update of the solution** (first the solutions modified less time ago).

Figure 9- Quarterly Ranking Ordering

4.2 CISE SEMANTIC ASSET SEARCH ENGINE

The **CISE** main page provides access to the semantic asset search engine:

Figure 10- CISE main page

The **Semantic assets search** is based on different search criteria that are specific to this type of solution. In addition to the possibility of entering a search text, it is possible to search according to the subtype of data model, grouped under the type "Semantics of an information exchange service" or the type "Semantic standard". The classification of data models is described in the section on creating a semantic asset.

Figure 11- Semantic assets search engine

5 HOW TO CREATE A NEW SOLUTION?

Users with profile "registered visitor of the PAe of the Public Administrations" must be logged in to create a new solution:
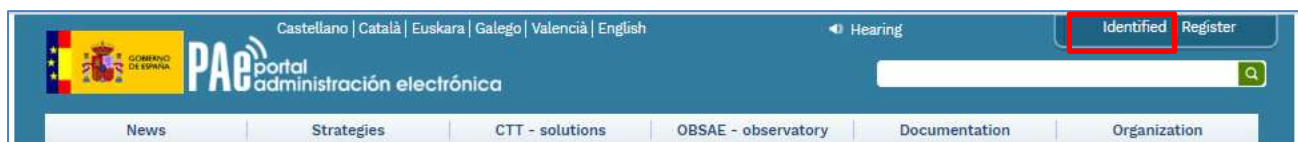

Figure 12- Log in

After the log-in, they must complete the registration either from the CTT side menu or from the CISE home page.
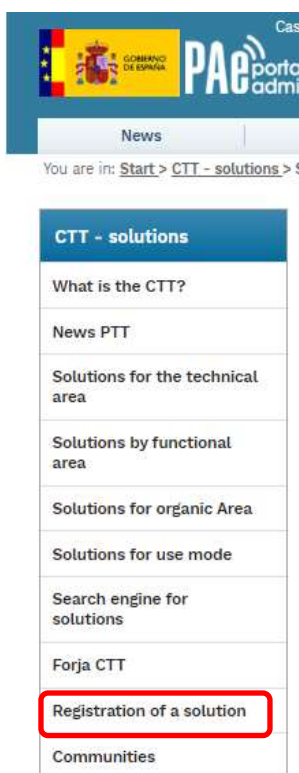

Figure 13- Accesses to a registration of a solution

If you try to access a solution registration without being logged in, a page explaining the registration process will be displayed.

To register a solution, the first step is to select the Solution Type, a Short Name and then click "Save". It is possible to select several types of solutions except in the case of a semantic asset.

Figure 14- Registration of a solution

The options of the Type of Solution field are:

- **Application**: installable in the client organization.
- **Open-source application**: installable in the client organization and that has been released with an opensource license.
- **Best practice:** use case of a service, tool, plan, etc. describing general characteristics.
- **Common infrastructure or service:** common infrastructures or services offered to different Public Administrations.
- **Regulation:** regulations, guidelines, practices, recommendations, methodologies, etc**.**
- **Semantic Asset:** reusable data models and semantic assets for information standardization and exchange.

The field "Short Name" is the Abbreviated Name of the solution by which it is usually known. It shall be used to generate a short URL for quick access. It must be between 3 and 16 characters long and only contain letters and numbers (it cannot contain accents, ñ or special characters).

The second step is to fill in a form with the detailed information of the solution registration request. Fields with an asterisk are mandatory.

Figure 15- Detailed information on registration of a solution

When the solution is approved, the applicant shall be notified to complete the rest of the information of the solution before making it public.

5.1 SEMANTIC ASSETS SPECIFICITIES

When selecting "Semantic Asset" as "Type of Solution" to be registered, the next form to complete will not ask for addressees but the promoting body and the data model subtype:

Figure 16- Data model subtype field

The available data model subtypes are:

- Semantic of an information exchange service:

  o **SCSP service** for compliance with art. 28 of Law 39/2015, of October 1, according to a data model that is compliant with the SCSP protocol, such as the services of the Data Intermediation Platform (PID).

  o **Non-SCSP service** for compliance with art. 28 of Law 39/2015, of October 1, according to a data model that is not compliant with the SCSP protocol, such as the services of the European Commission's Once Only Technical System.

  o **Service for communications between Public Administrations and natural or legal person,** such as the data model of the NOTIFICA web service.

  o **Consumer service open to the Private Sector** such as data models of services for open data consumption.

  o **Service for the exchange of administrative information between public bodies,** such as the of the SIR web service according to the SICRES specification, or the data models of data federation services for the SIA administrative information directory, or for the DIR3 public bodies directory, or for the CTT/CISE reusable public sector solutions directory.

- Semantic standard:

  o **Information Structure**, which is a structured representation of certain types of information, such as the XML schemas of the ENI electronic file and the eIDAS identity profile.

- o **Data Exchange Protocol,** which defines the semantic aspects of an information exchange protocol, such as the SCSPv3 protocol or the OASIS AS4 protocol.

- o **Common vocabulary,** which is the definition of a set of terms that constitutes a widely used language to describe a knowledge domain, such as the W3C's Data Catalog Vocabulary (DCAT) or the EU's Core Public Service Vocabulary

- o **Concept standardization,** which describes a standardized and usually codified set of concepts within a knowledge domain, also called *controlled vocabulary,* such as the WHO ICD-10 taxonomy of diseases and health problems, the UNESCO thesaurus, or the ISO 3166-1 coding of countries.

- o **Error coding convention**, which defines a set of standardized errors by using a code, an identifying text and a descriptive text for each error, such as the HTTP errors of the IETF, or the SOAPFault errors of SCSPv3.

5.2 FORGE-CTT SPACE FOR A SOLUTION

If you want a collaborative development in CTT Forge on GitHub for some CTT solution, you must contact the CAID support.

If you have any doubts about the licensing of your solution after reading the Asset Licensing and Publication Guide, a consultation service on licensing doubts is offered for all Public Administrations in collaboration with Red.es.

For solutions where the source code is to be distributed, the CTT offers a help tool that facilitates the process of adding headers in all the elements of the source code.

6 HOW TO MANAGE MY SOLUTION?

Each solution is independent from the rest of the solutions and is **managed entirely by its administrator** (by default the user who requested its registration).

The administrator of the solution is responsible for providing its contents, for the management and customization of the tools to use, for the management of the project collaborators, etc.

In other words, the CTT/CISE provides the **technological infrastructure and support** for the solutions, but **the public administrations are responsible for the solutions registered by their staff**, so their managing is **totally autonomous and independent** as they deem most convenient.

How to perform all these tasks is explained by the [CTT user manuals](#).

7 WHERE CAN I FIND INFORMATION AND ASSISTANCE?

To assist in the use of the CTT/CISE, documents at the download area of the ["CTT" solution](#) are available to registered visitors of the PAe from Public Administrations.

- **Guide to Asset Publication and Licencing,** developed within the scope of the National Interoperability Scheme. It contains every previous consideration and step to take into account before requesting the registration of a solution to be reused: copyright and authorship conditions, study of components, selection of the license, preparation of the asset for distribution, etc.

- **Guide for the provision of applications in service mode**, developed within the scope of the National Interoperability Scheme and the reuse in **service mode**. This is a support tool for Public Administrations that want to offer applications, platforms, infrastructures, or processes in service mode for reuse by other organizations. It includes considerations to take into account before requesting the registration of a reusable solution in service mode.

- **CTT Solutions Edition Manual**. Explains how to edit and manage a solution in the CTT solutions directory.

- **Mailman Distribution List Manager Manual**. Describes the most frequently used configuration options for distribution lists, as well as tasks to be carried out by the administrator/moderator of a distribution list.

These users also have two help services:

- **Support service**. For any doubt or incident on the use of CTT/CISE, you can contact the support service at http://soportecaid.redsara.es.

- **Consultation service on licensing**: In collaboration with Red.es, a [consultation service](#) is offered to Public Administrations to ask questions related to free software licenses and the licensing of their solutions.