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N4U

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# 1. Introduction

## 1.1 Purpose of the Document

Deliverable D8.1, i.e. *Online Help Desk and Knowledge-base Release Report* documents achievements made up to Month 6 on the support, documentation and knowledge construction of the N4U Science Gateway and its accompanying interfaces.

The content of this document thus emerged from several discussions and exchanges, which occurred with typical users and concerned partners of the consortium of work package 3.

In a project such as neuGRID4you, whose goal is to bring the neuGRID technologies to a wider audience and to enrich them accordingly, the Online Help Desk and Knowledge-base, falling under the general user support denomination, are key to successful outreach. Indeed, no matter how innovative and valuable technologies may be, if they are not used nor adopted by users, they can not sustain.

The Online Help-Desk and Knowledge-base are therefore here to facilitate users' uptake and to share with and capitalize on users' experiences as the neuGRID e-infrastructure evolves over time.

## 1.2 Definitions and context

An online Help Desk is a virtual Help Desk, figured by web portals and applications allowing users to either find help by themselves or ask a support team for personalized help. In the neuGRID4you context, the Knowledge-base is the sum of all the knowledge that is spread throughout the pages and documentations on applications of the project [N4U].

In the Help Desk some basic concepts are used: products, users (and/or customers), support teams and issues. In neuGRID4you, products means the Science Gateway software (either available through a web portal or in any other ways) that is made available by an entity (in our case the neuGRID4you consortium) to users, or customers in a more industrial or corporative environment.

The users are at a first step "internal users" that are part of a partner of the consortium, but in a second step, the user community will be much larger, and access should be widely open, thus users will potentially have a lot of heterogeneous backgrounds, expectations and skills, and the support teams will have to cope with this.

The support teams are the depositaries of the successful adoption of the neuGRID4you Science Gateway. If users are unable to successfully use the Science Gateway, if they are unable to have their problems fixed, to stay informed or trained on the tools available or on how to make the best and most efficient usage of them, the main value of the neuGRID4you Science Gateway will be lost.

Support teams are responsible of two things: documenting the Science Gateway (i.e. building a valuable Knowledge-base centred on utilizing the solution) and helping users getting rid of all problems they may face, while working within the neuGRID4you environment.

As in every software, users will from time to time encounter problems, ask for new features or even be looking for guiding procedures. All such requests, globally seen as issues, will be addressed to and by a support team, made of experts who will be responsible for offering the appropriate solution to the users.

## 2. Online Help Desk

### 2.1 Tools

While there is a broad range of available tools that could be helpful, the smallest possible set of tools was deployed to prevent users from being lost with too many choices. This should also reduce the number of misuses of the tools.

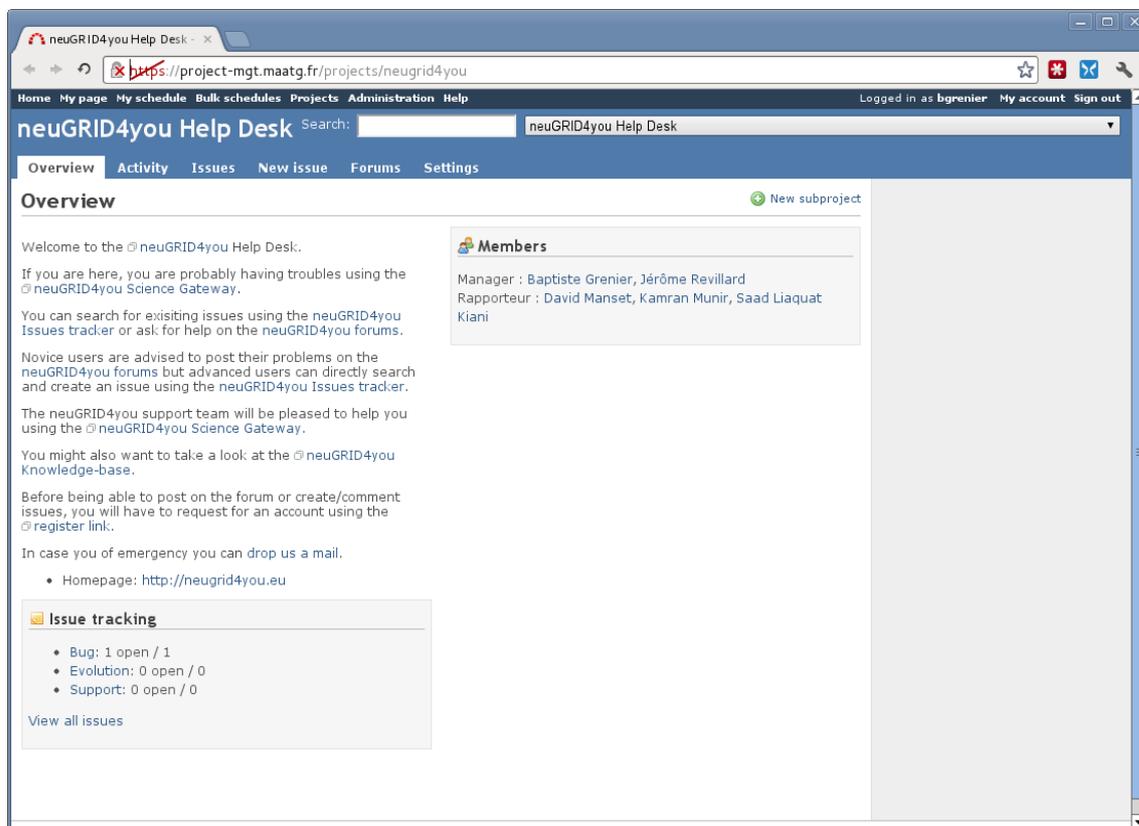


Figure 1: Help Desk front page.

The Help Desk [HELPDESK] front page (see figure 1 above) quickly presents the tools to the users and guide them on their utilization. The Help Desk is based on the Redmine [REDMINE] project management tool, a tool completely separated from the neuGRID4you Liferay web portal, with a simple local authentication system. Indeed, using such an architecture ensures that support access will not be impacted by potential login problems occurring with the more complex CAS single signon framework, being used as the central and unique authentication service for accessing the neuGRID4you portal.

The support tools are composed of an issue tracker and a forum/message board. Other modules are available but we chose to disable them for the sake of simplifying users' understanding.

These tools are supplemented with facilities provided by the Knowledge-base: i.e. the document library for storing static documentation, the Wiki used to host Frequently Asked Questions (FAQ) entries, and the blog/calendar for official announcements. These tools are presented in greater details in the Knowledge-base chapter of this document.

### 2.1.1 Issue tracker

The issue tracker (see figures 2 and 3 below) is the central component of the Help Desk. It can be seen as a database containing all issues associated with the neuGRID4you Scientific Gateway. The issue tracker allows tracking all events and discussions taking place during the lifecycle of an issue while making it accessible to all concerned parties. It can also be searched, in order to find existing issues about any possible subjects.

Different kinds of users exist: reporters, developers and managers. Each of these groups has different configurable access rights on the issues.

neuGRID4You users will thus be considered as reporters, the support team will be developers and some of them, i.e. the support coordinators, will be promoted as managers.

Not only bugs or problems encountered by users will become issues, features and support requests, but anything else will also be treated as issues.

Issues have a status reflecting their resolution state: New, Ongoing, Resolved, Closed and Rejected. According to the discussions and comments the statuses are updated.

Issues can also be classified in a category; the list of categories can be adapted as needed.

A default assignee is configured by issue category, but the issue tracker's managers are able to change the assignee as needed.

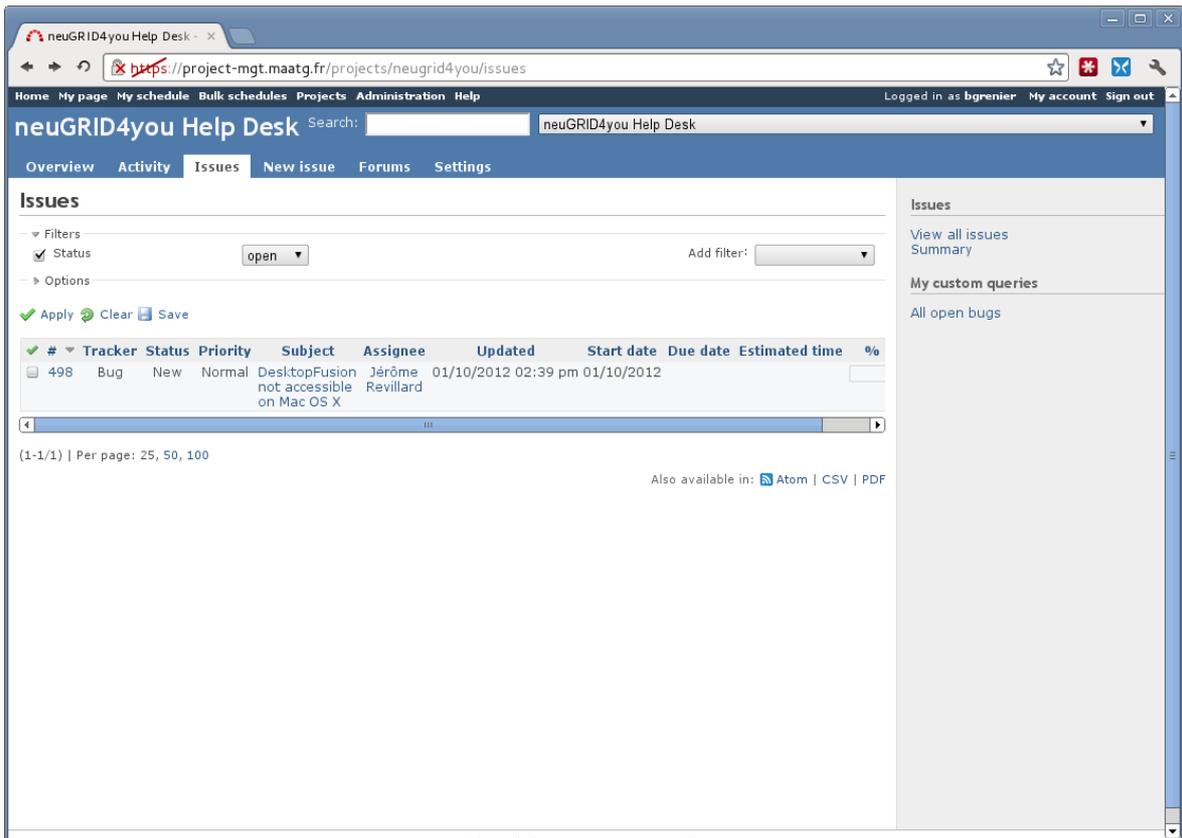


Figure 2: Issues list

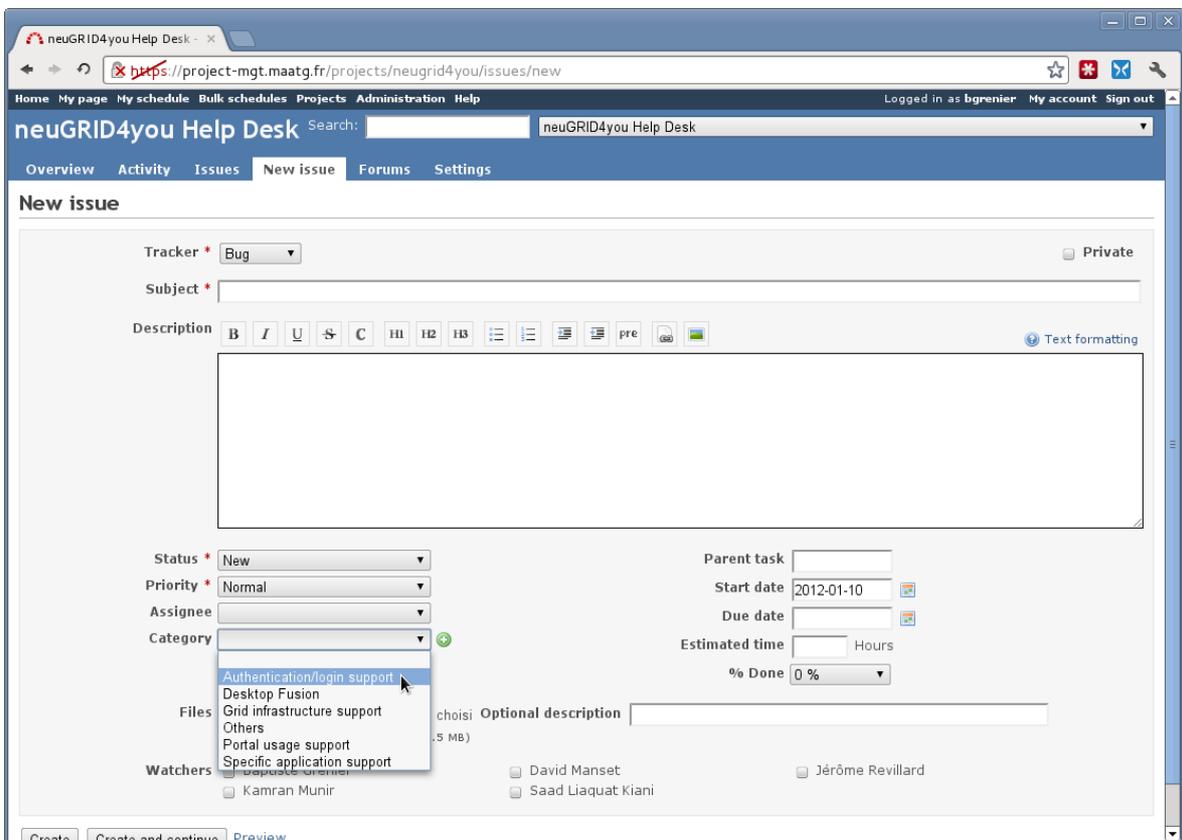


Figure 3: Issue creation

## 2.1.2 Forum - messages board

A forum, also known as a message board, is an online facility allowing users to discuss subjects organized in topics or threads. As its contents does not disappear, it can be searched and information can easily be found and reused. Some users can be promoted as moderators to help and drive users as well as to moderate the discussions. Forums can be divided into categories to better organize discussions. Questions posted recurrently on the forums are good candidate entries for the FAQ that is available in the neuGRID4you Knowledge-base.

The archive and search mechanisms provide users with a resource that can be used for capitalizing knowledge and can be used for “self-support” and mutual aid, so one of the side-interest of a forum is to foster social interaction between users, and to lead to the development of a community spirit among them.

Today the Help Desk forum (see figure 4 below) only contains the category “neuGRID4you support”, where users can ask for any support-related subjects.

The forum should become the first place for novice users looking for help. Advanced ones will be able to directly interact with the issue tracker.

Moderators will potentially ask novice users to create an issue if needed, or to create it themselves to guarantee the required tracking of the problem.

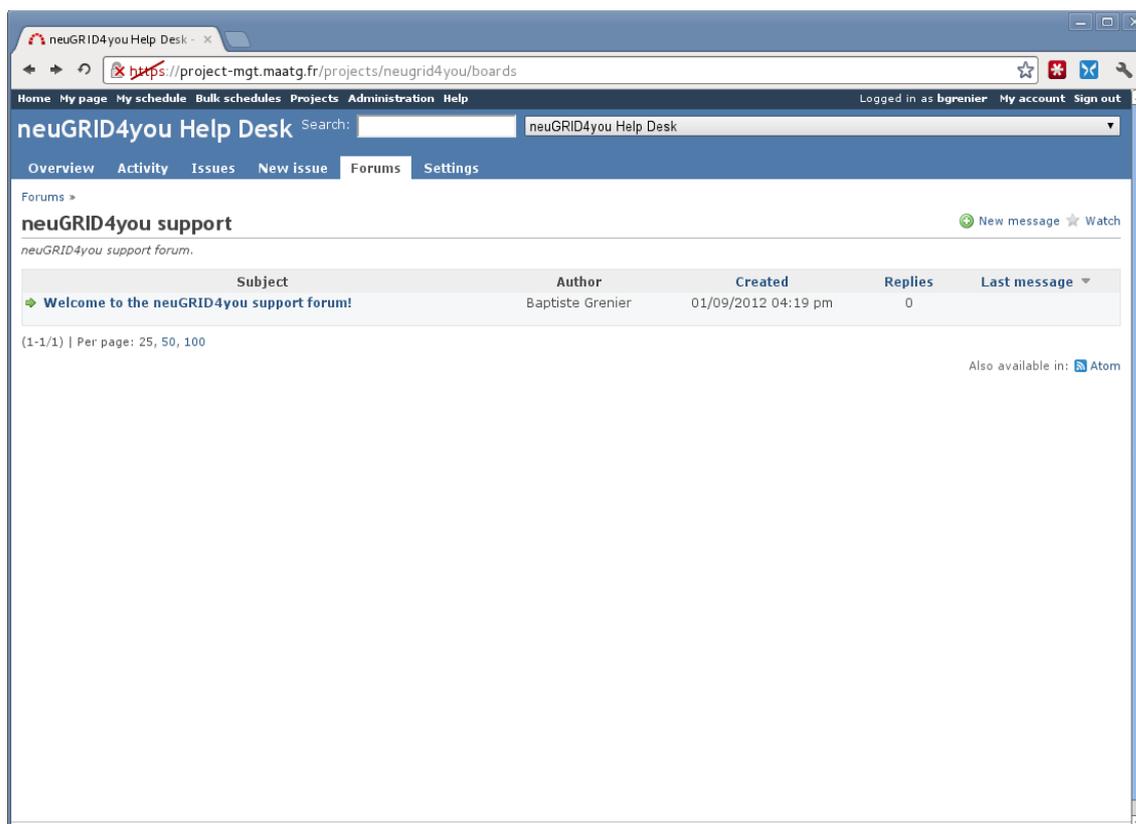


Figure 4: neuGRID4you support forum

## 2.2 Organization

The support organization is really important as it will have a direct effect on the usage and success of the support offer.

All users do not have the same technical background, so it is important to adjust answers and available tools to their respective levels.

Users can be divided into two major targets:

- Novice users,
- Advanced users.

Novice users do not have an important technical background and will require careful attention. Answers will have to be clear, simple and could be a good candidate for a new entry inside the FAQ section of the Knowledge-base. Their first place for finding help will be the neuGRID4you Support Forum.

Advanced users are usually able to narrow down the problem by themselves, are or will be quickly used to the logic of the issue tracking system.

Due to this we need at least two support levels:

- First level: self support using the contents available inside the Knowledge-base, and the Support Forum;
- Second level: interactions with humans/support teams of the Help Desk, most often starting from the messages boards, but also using the issue tracking system.

From inter-partner discussions emerged the fact that support also has to be divided into three distinct areas:

- User front-desk (i.e. account creation, basic platform functionalities);
- Specific application support (e.g. answering questions related to algorithms, datasets, Science Gateway applications);
- Infrastructure (grid) monitoring and support.

For the time being, the following issues categories have been created, as follows:

- Authentication/Login support;
- Data management;
- Desktop Fusion;
- Grid infrastructure support;
- Portal usage support;

- Specific application support;
- Others.

A last, category “Others” was added for issues not falling under any of the other categories.

Default assignees were also defined for each category, default assignees and managers are allowed to re-assign the issue to someone as needed.

Regarding the infrastructure grid monitoring and support, maatG deployed a Nagios box [NAGIOS] for Grid monitoring. For the moment, access to this Nagios box is restricted but it will soon be open more widely to pertinent partners.

Since tools required for an efficient user support are in place, formalizing support teams is now becoming mandatory. In order to be as reactive as possible, support should be assumed by different teams, which will be responsible for the domain there are specialized in.

In order to synchronize efforts and spread knowledge across the teams, collaborators are encouraged to fill the Knowledge-base in with all data they may find useful. All this will then be available to other support teams and to end-users.

Once the teams will have been defined, they will be presented in the neuGRID4you Knowledge-base along with the corresponding fields of competences.

At this time teams' organization is not completely formalized, but it should be something fairly simple with one responsible, doing the coordination of the issue tracking (i.e. issues triage) and ensuring that no issues are left unresolved, or at least that there is someone working on them. Other members will “just” have to work on resolving issues: creating an issue if not done yet, following discussions happening in the forums, reproducing, fixing (if possible) and documenting them. Some users will also be promoted to moderators roles to help discussions in the forum.

A FAQ entry explaining how to start looking for help has also been created to inform users on what is available. Here is the thumb rule for obtaining help:

- Novice users are advised to report problems to the neuGRID4you Support Forum where either:
  - Other users will be able to help them,
  - Support team members will be able to help them and if needed asked to create an issue or to directly create it.
- Advanced users are encouraged to directly use the issues tracker, to search for existing issues related to their problems before submitting new ones.

## 2.3 Conclusion and Future

Now that the Help Desk tools have been deployed and are available for use, it will be important to study how the support needs are fulfilled by listening to users and asking about their feelings on the support offer. A satisfaction survey might be submitted to the user community to find strengths and the weaknesses of this offer. Threads on the forum can become tools used to gather users' wishes that could be either explained in the Knowledge-base or described in an issue in the issues tracker as a feature request. It is important to keep trace of users' feedbacks as it permits to get an overview of how the support offer is perceived and how it should be improved by adapting, documenting or adding more tools.

The support organization is definitely really important as it will have a direct effect on the usage and success of the support offer, thus on the Scientific Gateway usage and on the perception of its quality.

As the different support targets, levels and areas have been isolated, the teams that will share efforts and expertizes for all levels have to be defined, as well as responsibilities.

Tracking issues is mandatory to deliver a good quality of service for the support, it will ease and centralize the communications with the users, and allow formalizing and standardizing processes and knowledge.

To achieve a satisfactory level of support, preliminary choices have been made as follows:

- Forcing individual user authentication in order to easily trace problems and to have a better view of the user level, allowing to adjust the support to his background;
- Offering a tool separated from the main portal to avoid portal-related (technical) problems.

In the future some tools such as mailing lists, Wiki and document library specific to the Help Desk can be deployed. Trainings are also a way of doing proactive support and will be supported by the web portal.

## 3. Knowledge-base

### 3.1 Tools

The neuGRID4you Knowledge-base represents all the knowledge available in the neuGRID4you Scientific Gateway. This knowledge is spread across several tools falling into three categories:

- Tools for static documentation provided and maintained by the partners;
- Tools for dynamic documentation that can be created and maintained from the initiative of the partners but also by users. Authentication is required to update these channels, changes are tracked and modifications history is kept making revert changes possible;
- Tools for announcements and communications destined to the user community.

The main components are the Knowledge-base Wiki, hosting the FAQ, the document library and the web log and calendar page.

### 3.1.1 Wiki / FAQ

A Wiki is an online tool allowing a participative edition of web site content: every user can become an editor, add pages, fix errors etc (but authentication is required and changes are tracked and kept so to enable recovery from errors). The only required tool to be able to edit contents is a modern web browser making it a very accessible tool for editing web site contents. Redaction is done using a simplified markup language allowing to format the text using textual tags, having a defined signification.

The Wiki allows to have a hierarchical organisation of pages, with interlinks between them, allowing to navigate back and forth from one concept to another. A search facility is also available.

The Wiki application used for the Knowledge-base Wiki (see figure 5) is a Liferay portlet deployed in a page of the neuGRID4you Scientific Gateway community, restricting access to users belonging to the neuGRID4you Scientific Gateway community only.

The contents can be authored using the Creole Wiki markup language [CREOLE] or with the standard HTML markup code [HTML].

The Wiki is also hosting the neuGRID4you FAQ (see figure 6), thus allowing users and support team to add contents to it.

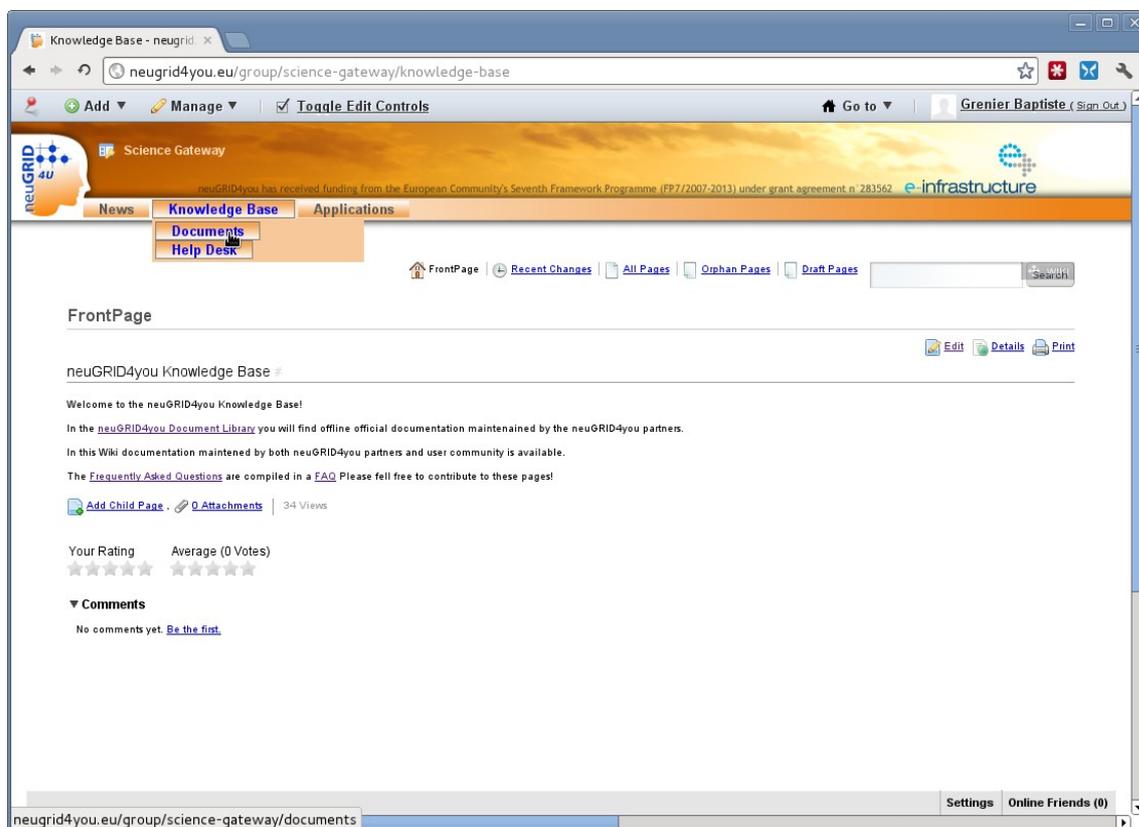


Figure 5: The Knowledge-base Wiki

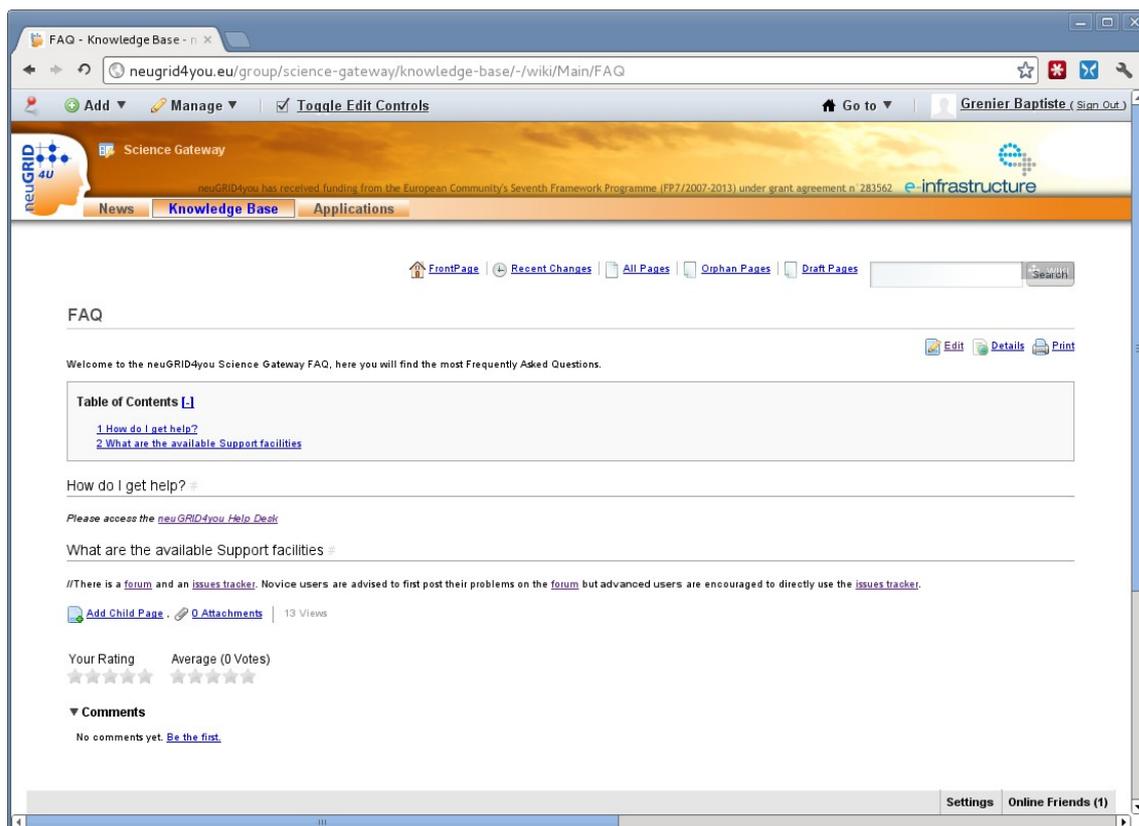


Figure 6: Knowledge-base FAQ

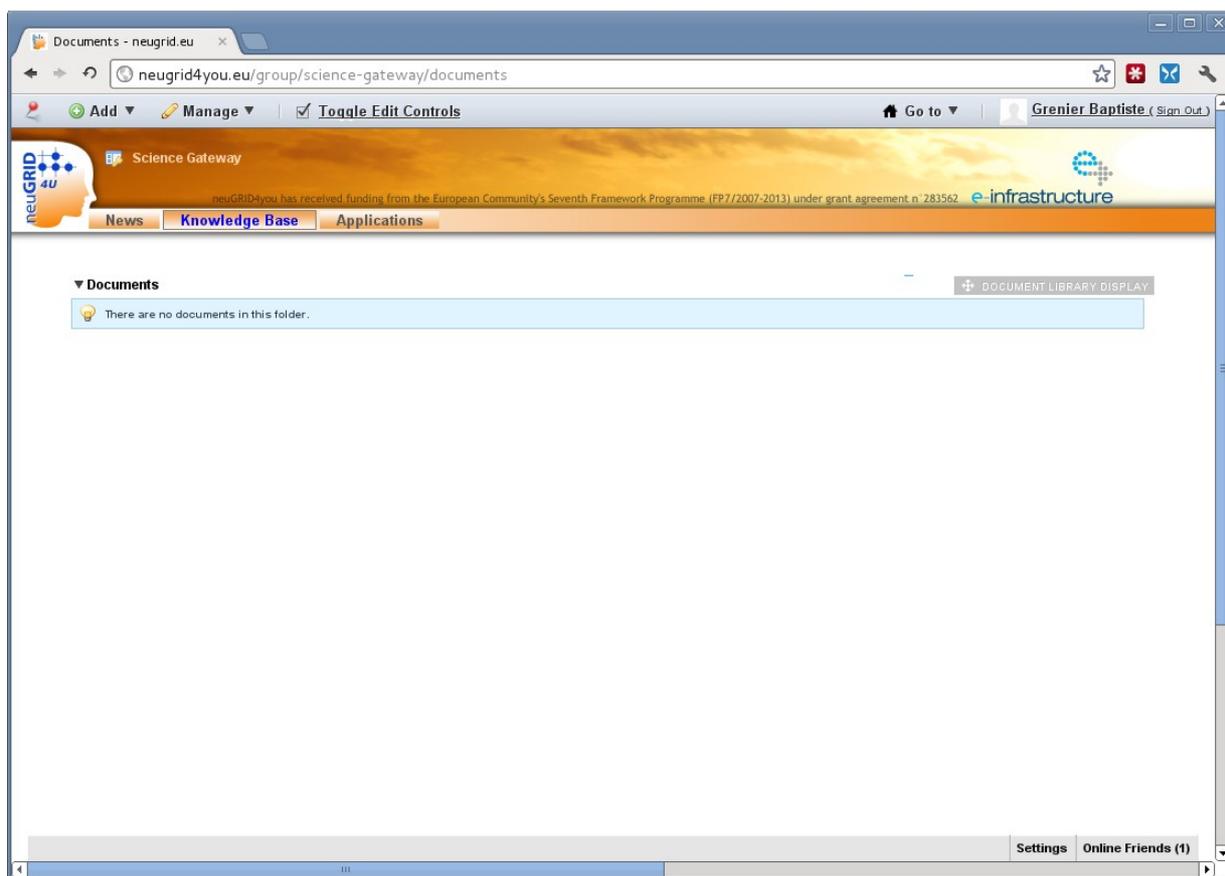
When a Wiki is active, it is a great way of keeping documentation up-to-date, corrected, and consistently located at the same web address, thus made easily reachable and usable over time.

### 3.1.2 Document library

The document library (see figure 7) is another portlet deployed into Liferay allowing users to store documents under a virtual directory tree.

Document-related permissions can be set individually with a fine-grained granularity.

It is a fantastic tool for providing a simple, secured and centralized access to a library of electronic documents such as official static documentation that will be created by partners and users.



*Figure 7: Document library*

### 3.1.3 Web log and calendar

A Web log or blog, is an online web tool allowing a person or team to publish a journal made of posts. Most of the blogs are focused on a single subject.

The Knowledge-base web log (see figure 8) thematic is to provide news about the neuGRID4you Scientific Gateway to its community. The news can be on different subjects such as:

- New tools or documentation publication;
- New events (in addition to the usage of the calendar portlet);
- Planned and unplanned downtime;
- Possibility of longer response time and/or errors due to maintenance;
- Temporary unavailability of tools;
- ...

The Liferay blog allow users to comment on the posts as well as tagging and rating them, thereby allowing users to react to the contents and to express their opinions.

Another useful feature is the blog syndication broadcast ability. A user can register the blog syndication feeds in one of his tools and then be notified that new content was added to the blog without having to visit it daily.

The community-based calendar portlet, which is available on the same page as the blog, is another tool allowing entering and sharing planned events with the user community. Reminders can be set to warn users of upcoming events.

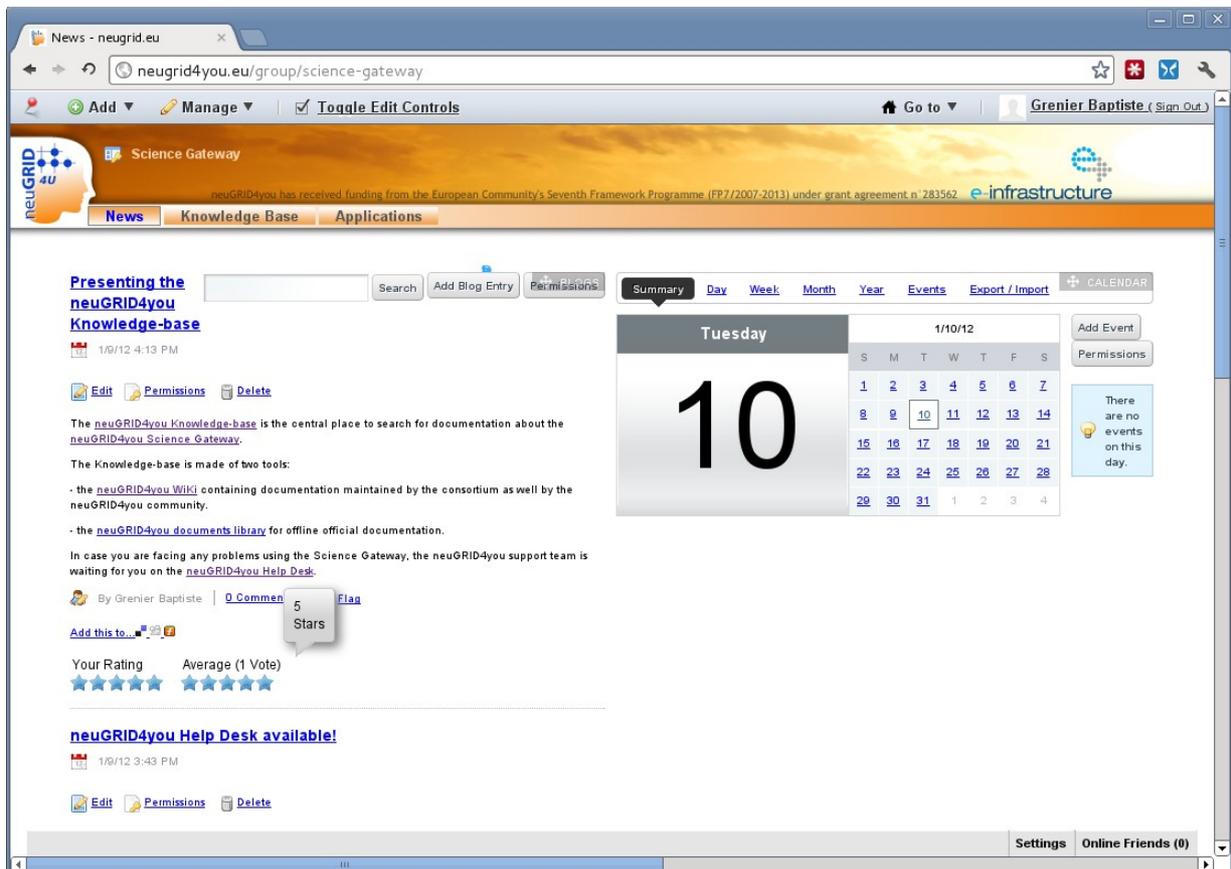


Figure 8: The Knowledge-base web log and calendar

## 3.2 Organization

In order to make it useful, partners need to put a strong effort in publishing and maintaining contents into the Knowledge-base Wiki to capitalize on the available information. This will be helpful to convince users and to motivate regular Wiki usage (both reading and writing).

Every important things/processes happening into the context of the neuGRID4you Scientific Community should be advertised using a post on the Scientific Gateway community blog. This will allow informing users as well as gathering their feedbacks easily and inexpensively.

When events are planned, they have to be added to the calendar available on the same page.

### 3.3 Conclusion and Future

Using these tools the Knowledge-base will be one of the key components of the success of the neuGRID4you Scientific Gateway, allowing users to utilize all its tools and power.

As for the Help Desk, users' feedback will be key information for adjusting and optimizing the Knowledge-base organization and usage.

Some more documentation on the Scientific Gateway will have to be produced as quickly as possible, on aspects such as the basic usage of the platform, the Knowledge-base and the Help Desk, as well as simple security practices to follow in order to enforce security.

The Knowledge-base should neither be too big nor too small: if it becomes too big users will be lost in all the available data and will thus not be able to find accurate information. If it is too small, it will be unused and useless. In both cases, users will be frustrated preventing them from encouraging neuGRID4you Scientific Gateway usage.

Concerning the Help Desk usage of the Knowledge-base, here is a list of important things to bare in mind:

- As for regular Knowledge-base data, if Help Desk-related data is too large users will not be able to find accurate information related to their problems and if it is too small and contains only a few of the most frequently faced problems users will be unable to find help. In both cases they will need help from an expert, which is more expensive;
- The information should be easy to find or users will give up searching and thus end up asking for personal support, which is again more expensive;
- It should be as easy to search the Knowledge-base, as it is to understand extracted contents. Answers should be self-explanatory, i.e. without requiring any specific skills. Everything should be clear, reasonably detailed and understandable by novice users.

Last but not least, answers/solutions should be up-to-date, as it is very common to end-up with static documentations outdated and thus no longer accurate.

## 4. Conclusions

As presented in this deliverable, user support is key in attracting and keeping users interested. Tools for Knowledge-base and Help Desk have been deployed, but the target will be reached only if a general effort on using and filling it with useful data is invested by the partners. Showing users that the Knowledge-base is valuable can drive the community to use it. Help Desk will also be a key for making them feel that they are important, that people are doing their best to make the platform work and to help them using it.

After all, the motto for neuGRID4you is to motivate neuGRID technologies adoption by the users, users are the "*raison d'être*" of the whole neuGRID4you project and the Knowledge-base and Help Desk are their to make them feel this. Their only justification is to serve users.

## 5. References

HELPDESK - <https://project-mgt.maatg.fr/projects/neugrid4you>

REDMINE – <http://www.redmine.org>

N4U – <http://neugrid4you.eu>

NAGIOS – <https://nagios.maatg.eu/nagios>

CREOLE - <http://www.wikicreole.org/>

HTML - <http://www.w3.org/TR/html4/>