The CLARIN-D Help Desk

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1. Scope

For an infrastructure project like CLARIN, a help desk can be seen as an interface to the outside world that both enhances the visibility of the project and offers insight into the way the research community is using it and its components. Therefor it has to be centralized in the sense of bundling the CLARIN-D-specific issues, optimizing support and providing collective knowledge resources to the user community. At the same time it has to provide maximum flexibility to all centres in the implementation of the support for centre-specific tools and resources. This fact puts high requirements on the choice as well as the conception and implementation of the help desk infrastructure.

This **poster presentation** will provide an overview of the work undertaken to fulfil these demands in the CLARIN-D Work Package 7 ("Support and Help Desk") in the past three years and the experience gained through one year of productive operation.

2. Structuring Expertise

The basic conceptual idea of structuring the workflows and support routines of the CLARIN-D help desk was a 'Taxonomy of Support Areas' that mirrors and orders CLARIN-D activities and expertise. It was implemented as an integral part of the CLARIN-D ticketing system (based on the Open Technology Real Services (OTRS)[1] ticketing system) through a set of hierarchically ordered *queues* that act as containers for incoming support requests.
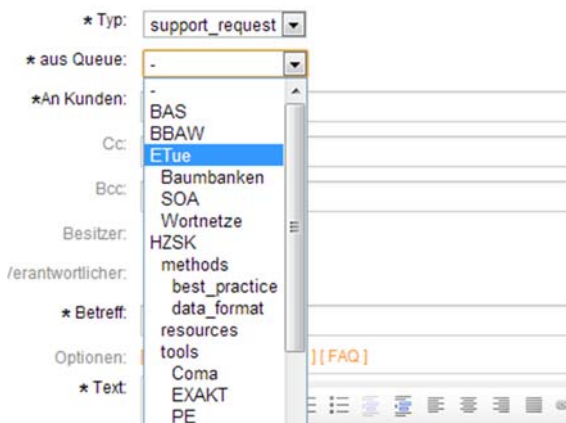
In practice each centre was assigned to a top-level queue, whereas sublevels were defined to match specialized sub-domains of expertise administered by the respective centre. For example, as shown in Figure 1, the *UTue* queue assigned to the University of Tübingen contains sublevels for treebanks (labelled in German *Baumbanken*), service-oriented architectures (*SOA*) and WordNets (*Wortnetze*). Each sublevel queue is assigned to specific personnel at each centre who act as help desk agents. Help desk agents in turn are organized into groups that have exclusive administrative privileges to their centre's queue and its subordinate queues. To achieve a maximum use of CLARIN-D-wide synergies and at the same time cope with center-overarching domains of expertise (like for instance in the case the above-mentioned treebanks), access to the queues can be granted to every person at every centre that is a registered help desk agent (see also 3.2.3).

3. Implementation

The CLARIN-D Ticketing System as a central platform to provide a CLARIN-D wide user help desk began operating in June 2013 after an intensive phase of planning and testing.

3.1 Ticketing Workflows

To reduce personnel effort and costs, user support is performed by student assistants who are supervised by at least one expert at every CLARIN-D centre. Experts, as per definition, are specialist for the local implementation of the help desk as well as centre-specific expertise.
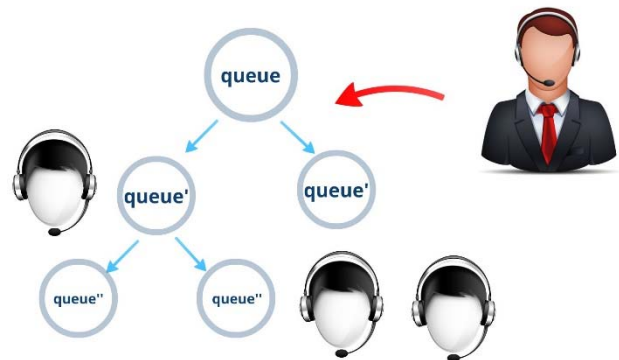

Figure 1- Hierarchical queue structure

Figure 2 – Supervising and delegating tickets

A support process (henceforth called *ticket*) that results from user queries can, thereby, be initiated in several ways, depending on the users' preferences (see Figure 3).
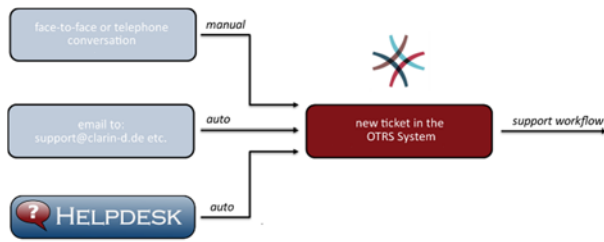

Figure 3 - Ticket initiation

Tickets can be created manually – based on incoming requests via personal email, telephone call or face-to face conversation – by any help desk agent. Automatic ticket creation, however, is initialized by incoming emails to the CLARIN-D support email account (*support@clarin-d.de*) or other email addresses that may be used for centre-specific support and that will initiate ticket creation in the specific queue. Alternatively, a ticket can be created (and also pre-classified) by using web based contact forms that are distributed all over the CLARIN-D web site and linked by call-to-action buttons (see also 3.2.1).

Once a ticket is created, the user who has requested help receives, within minutes, an automatically generated acknowledgement, confirming that the support request is processed. Simultaneously, the ticket is automatically sorted into a respective ticket queue that is part of the hierarchical queue structure. Depending on the queue, the notice of arrival mentioned above may contain personalized information such as links to relevant documentations or FAQ list (see 3.2.3). At the same time, at least one CLARIN-D expert who is responsible for the respective support queue is notified via email.

The first help desk agent to open a ticket is, by default, assigned *responsible* and *owner* of the respective ticket. Whilst being *responsible* implies that the agent is in charge to keep control over the entire support process, the assignment *owner* enables him/her to delegate the ticket to another help desk agent to work on the ticket while it is locked for everybody else.

Every authorized help desk agent is entitled to request ownership and/or write comments and receive notifications concerning the tickets status. Furthermore, it is possible at any time to forward a ticket to an external expert via email and thus integrate third parties into the support. The expertise provided by the ticketing system is thereby not restricted to solely the circle of help desk agents.

Further mechanisms that grant for an effective and fluent support process:

- In case a help desk agent is unavailable for a certain period of time he/she can set an out-of-office message to inform those agents whom have him/her assigned as *owner*.

- In case a request has not been processed within two working days, an automatic escalation notification is send to the respective administrator to ensure a timely processing
- After a ticket has been closed, any further user inquiries will automatically reopen the ticket and automatically assign it as described above.

3.2 Experience and further Optimization

Due to the early stage of implementation of the CLARIN-D infrastructure, the number of CLARIN-D users is only just growing. Thus it is to be expected that a growing number of users will naturally lead to an increasing number of support requests that have to be processed without tying up too much personnel resources on the help desk work. (At the present time, quantitative statements about the number of support requests, and the effort associated with answering questions, are based on the number of about 500 tickets that have been processed successfully since the initial start-up of the help desk system.) To grant the optimum use of the support system, it has to be kept in mind at all times to minimize the effort for the help desk agents as much as possible by optimizing the support workflows described here. It has shown that this is done best by

- adding further channels for users to get in touch with the help desk and combine them with mechanisms for pre-selecting and pre-processing tickets (see 3.2.1),
- making optimal use of synergies between CLARIN-D centres(see 3.2.2),
- making maximum use of FAQ lists and documentations (see 3.2.3).

3.2.1 Mechanisms of Pre-selecting Tickets

To make it easier for users to get in touch with the help desk and at the same time gain insights into how the infrastructure and its components are used, it is crucial to

Figure 4- Help desk button

identify where user assistance is needed. For this purpose the idea of *help desk buttons* was developed, following the principles of emergency call boxes, which provide an intuitive access to the help desk. As a result, a

considerable number of these call-to-action buttons were placed all over the CLARIN-D website (Figure 4).

After having clicked a help desk button, a web based form pops up enabling the user to send a message to the CLARIN-D help desk. Depending on the location of the button on each webpage, parameters are transmitted to the help desk that are designed to automatically assign any newly created ticket to its respective queue and consequently delegate it to a qualified CLARIN-D help desk agent. This allows not only a fast ticket assignment but also a direct contact between users and help desk agents. The form that is used with the help desk button is highly customizable, so that, depending on where the buttons is embedded, additional user information can be collected, simplifying the allocation as well as the response process.

3.2.2 Creating Synergies between Centres

As described in 2 the current queue structure of the CLARIN-D ticketing system has all nine CLARIN-D centres assigned to the first level. This structure, at first glance, has changed from a 'Taxonomy of Support Areas' that had been defined at the beginning to a structure that rules responsibilities to several domains of expertise.

However, this principle does neither discount the idea of a centre-overarching work to process incoming tickets but indeed supports the optimal use of synergies between the different centres in the CLARIN-D infrastructure. During the past implementation phase, it was realized that the initial support requests often dealt with concrete issues concerning CLARIN tools or services. Thus they had to be processed as quickly as possible by one specific expert coming from the respective CLARIN-D centre. Additional and supplementary information about methodical and technical issues often did not emerge up until later stages of support process. Consequently, the tickets only then were forwarded/delegated to an overarching circle of experts. For this purpose the ticketing system, among other things, uses the role concept as described above that, firstly, clarifies the allocations of ticket responsibilities between the agents and, secondly, encourages collaborative work between the members of different centres.

In most cases this was realized by delegating a request to another help desk agent or help desk queue. To allow to the help desk agents to also consult external experts, having no direct access to the CLARIN-D Help Desk, the ticketing system provides an email interface for external communication. At the same time, all tickets not being assigned to centre internal queues (due to data protection issues this could become necessary) are, at any time, accessible for every CLARIN-D help desk agent. Such tickets can commented on, ownership can be request or the agent can simply engage in a discussion. An exchange of knowledge and expertise is thus always guaranteed. Already during the early stages of the help desk implementation, comprehensive synergy effects were discernible - especially between centres sharing similar expertise.

3.2.3 FAQ-Lists and Documentation

The OTRS system contains a powerful FAQ-module that allows for the creation, administration and hierarchical structuring of multiple (and probably nested) FAQ lists. These FAQ lists (or parts of them) can be made publicly accessible or access can be restricted to registered customers or help desk agents only. This allows not only for the creation of internal FAQs that deal with CLARIN-D internal issues like ticketing workflows, documentation of the ticketing system etc., it also enables CLARIN-D members to work collaboratively on FAQ lists that are generated on the base of user requests and discuss them before their publication.

Unfortunately the web based FAQ-frontend that comes with the OTRS system does not fit the demands of a user friendly interface that eases the access to information in an intuitive manner. Thus to allow for the embedding of FAQ lists into all CLARIN-D websites an export function was implemented, that creates HTML, XML and JSON output from the FAQ System and thus enables everybody in the CLARIN-D infrastructure to integrate the FAQ content. In doing so CLARIN-D wide FAQ content can be administered and kept updated centrally in the ticketing system and at the same time spread as wide as possible.

4. Conclusion

After one year of experience in performing support via the CLARIN-D help desk it can be resumed that the concept of assigning roles as well as the taxonomic queue structure have proven successful.

Besides the steps towards an optimization of the help desk workflows described in 3.2 the focus of further activities will have to be on the integration of local support routines in the CLARIN centres and probably further institutions that provide CLARIN-relevant services. In doing so the help desk will also contribute to a closer integration of these institutions into the CLARIN infrastructure.