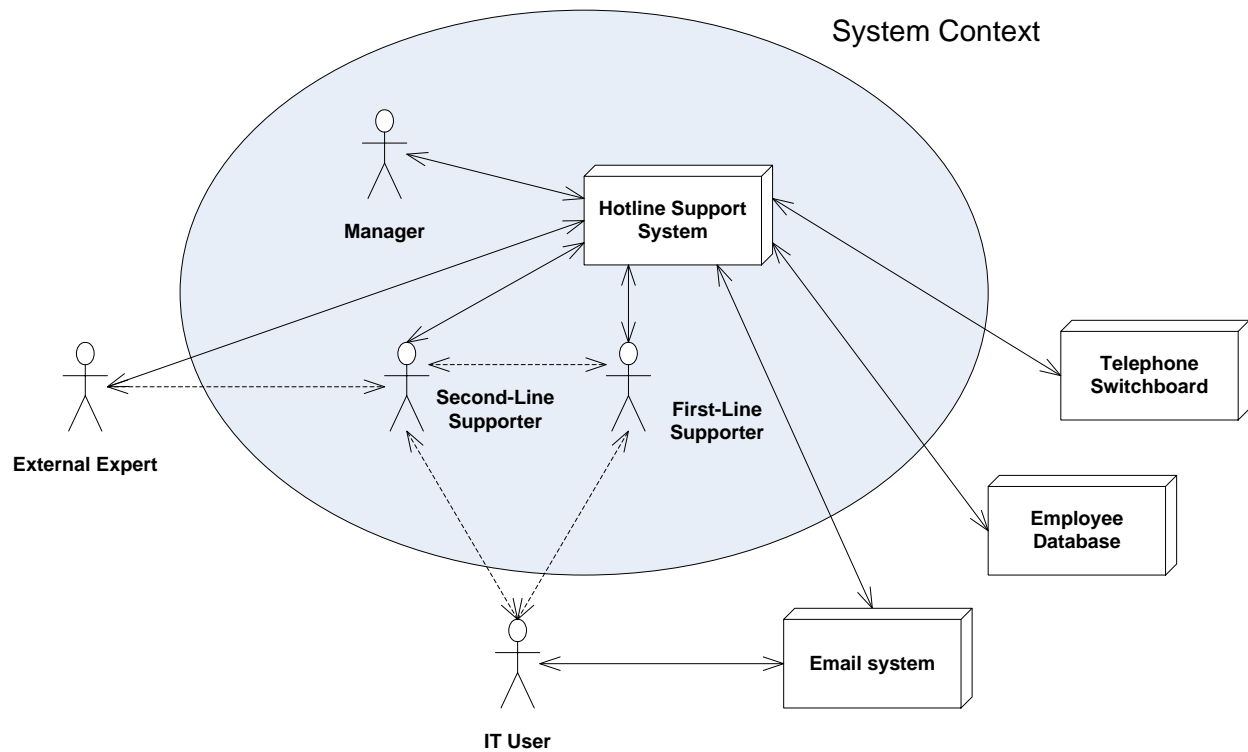
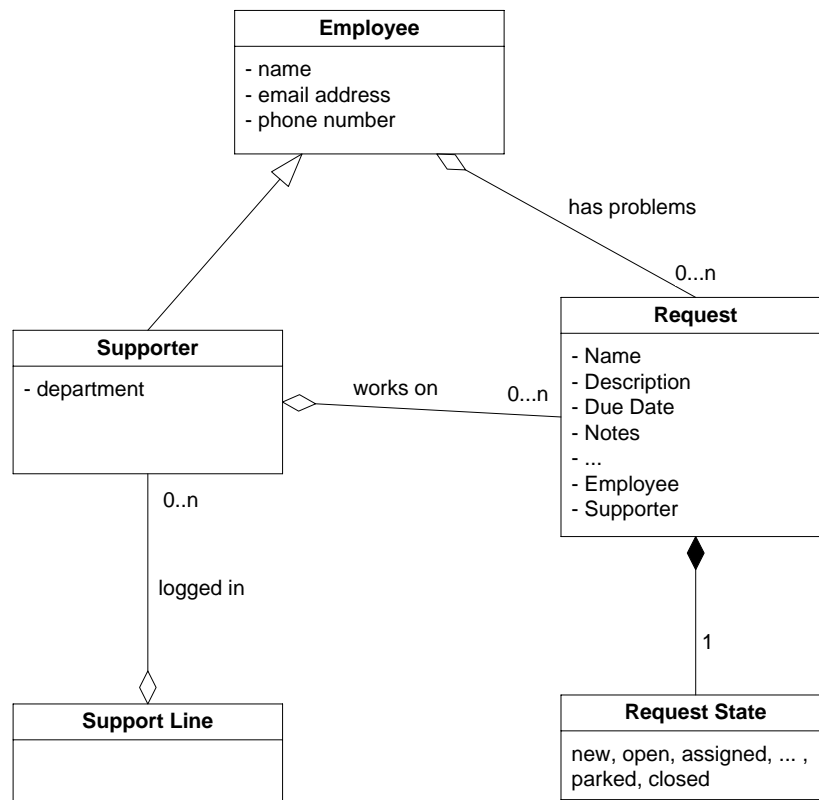


A. Kontext Diagramm:



B. OO Data Model



C. Work area: Request System

This work area comprises the creation, status changes, deletion, changing etc. of trouble tickets in the request system (in the remainder of this document: the system).

User profile: *IT User. IT users with varying knowledge. They have normal problems like forgotten passwords, empty printer toners, things to repair, software to install etc.*

User profile: *1st level supporter. Supporters with good overall knowledge of the IT and systems in the office. They can fix small problems like forgotten passwords or help with software usage problems.*

User profile: *2nd level supporter. Supporters with more detailed knowledge. Often 2nd level supporters are needed to repair things or to go outside the helpdesk e.g. for repairing a printer.*

User profile: *Expert supporter. Supporters with expert knowledge of parts of a system, hardware etc.. Expert supporters are often external and it is harder to integrate them in communication processes.*

Environment: *Office. IT-Work, computer problems...*

C1. Create a request

This task shows the procedure for creating a new request.

Start: *An IT User has a problem, e.g. an empty toner in a printer or a program does not work as expected, and wants to contact support (create a request).*

End: *The problem (request) is resolved.*

Goal: *The request is successfully resolved by a supporter or by the user himself.*

Frequency: *In busy periods a supporter may receive up to 50 requests per day.*

Difficult: *(never)*

Prio: *1*

Quality Requirements: *See Subtasks*

Users: *IT User, 1st level supporter, 2nd level supporter.*

Subtasks and variants:	Prio	Example solutions:	Quality Requirements:
1. Write an email to hotline@... .		All email to hotline@... Is automatically transferred in the ticket system (see C3 and C4)	Communication from the email-system shall work in under X minutes. The user shall be able to write a ticket if the email system is available. The ticket shall be transferred to the request list at least during working hours.
1a. Call the hotline.		Hint: See C3, Solution to 1p.	
2. Describe the problem.		If the system is connected to the telephone switchboard, this has to be done by the supporter.	
3. Wait for the problem to be resolved.			
3a. Write an email to hotline@... that the user resolved the problem himself.		A standard wording could cause the system to automatically close the request.	As in 1
3b. Call the hotline and tell that the user resolved the problem himself.			
4. Retrieve an email that the request is closed.			Communication to the email-system shall work in under X minutes.

C2. Login / Logout as supporter

This task shows the login and logout procedure for supporters.

- Start:** *A Supporter wants to start his working day (as a first- or second-line supporter), wants to switch his role from first to second line or vice versa, or wants to finish his working day as a supporter.*
- End:** *The supporter is logged in / logged out.*
- Goal:** *Supporters may change their activity from first-line to second-line and vice versa, even during a working day. For their current supporter activity they can configure their use of the hotline system, e.g. configure potential E-Mail-notifications when working in currently less-time consuming second-line support.*
- Supporter is successfully logged into / out of the system.*
- Frequency:** *Once, maybe twice per day, per supporter.*
- Difficult:** *(never)*
- Prio:** *3*
- Quality Requirements:** *95% of the supporters shall be able to execute this task without prior introduction to the system*
- Users:** *1st level supporter, 2nd level supporter.*

Subtasks and variants:	Prio:	Example solutions:
1. Login.		
2. Choose 1 st , 2 nd line.		
2a. No or not enough supporters in either 1 st or 2 nd line.		Force login in the according line.
3. Optional: Configure user-settings for hotline-system (e.g. email-notification for incoming requests or a reminder concerning due time of requests)		
4. Optional: Switch Role		
4a. No or not enough supporters in either 1 st or 2 nd line.		Do not allow to switch role.
5. Log out.		
5a. No more or not enough supporters in the line the user logged out from.		Notify other supporters (screen message, email).

C3. Handle and resolve a simple request

This task describes how a simple request can be dealt with from occurrence to resolving or escalating.

- Start:** *In case of first-line support: A new request is just arrived and a first-line supporter takes on the request.*
In case of second-line support: A second-line supporter takes on a request assigned to him / second-line.
- End:** *The supporter (first- or second-line) has resolved the request or transferred the request to another supporter.*
- Goal:** *Supporter (first- or second-line) takes a request and resolves it without help of another supporter or external expert.*
- Frequency:** *Up to 50 requests a day may be created. Furthermore requests can be moved to other supporters or from 1st to 2nd line.*
- Difficult:** *(never)*

Use Case Experiment results – Bonn-Rhein-Sieg University of Applied Sciences

Prio: 2

Quality Requirements: 90% of the supporters shall be able to execute this task without prior introduction to the system

Users: 1st level supporter (Logged in to the system), 2nd level supporter. (Logged in to the system)

Subtasks and variants:	Prio:	Example solutions:
1. Take a request from the overall request list (owner assignment to a new request).		See Figure 1.
1a. Owner change; for instance in case of illness or holiday of a supporter.		
1p. The request is incoming via telephone. The supporter may forget to create a ticket in the system if the request can be solved quickly.		Force the supporter by automatically creating a ticket and assigning to the supporter. e.g.: The system is connected to the telephone switchboard and employee database such that: <ul style="list-style-type: none"> - The system can record who called and who answered the call - The system can create a new ticket with this information (as in C1) - The system may record the length of the call Everything else is the same as 1, 1a.
2. Set priority. Add a due date (deadline).		
3. Classify the case according to the cause of the problem (printer, login, etc.).		
4. Optional: Change owner to a dedicated supporter, being an expert in the problem.		
5. Record a problem cause.		
5a. Start a complex request task (T3) in order to find a solution by a second-line supporter, possibly in cooperation with an external expert.		
6. Close request.		
7. Notify the sender of the request that the ticket is closed.		The System can do this automatically (e.g. by email) when the request is closed.

C4. Handle and resolve a complex request

This task describes how a complex request, being a request that needs help from (external) specialists, can be dealt with from occurrence to resolving or escalating.

Start: Second-line supporters take a request and aim to resolve it with the help of an external expert.

End: A second-line supporter takes on a (complex) request assigned to him.

Goal: The supporter has resolved the request or transferred the request to another supporter.

Frequency: Up to 5 (10% of all tickets, see a B2) a day.

Difficult: (never)

Prio: 4

Quality Requirements: 90% of the supporters shall be able to execute this task without prior introduction to the system

Users: 2nd level supporter (Logged in to the system), external expert

Use Case Experiment results – Bonn-Rhein-Sieg University of Applied Sciences

Subtasks and variants:	Prio:	Example solutions:
1. Demand solution from external expert.		
1p. Communication from/to experts is generally bad.		<ul style="list-style-type: none"> - Export requests (give expert all needed data, e.g. aggregated by email) - Give experts a “guest” account to the ticket system such that they can view/work with this special request. - Give experts a ticket number such that communication emails can be integrated in the system.
2. Optional: Park request. / Set appropriate reminder-notification for supporter himself.		On due date for the reminder the system sends an email to the supporter.
3. Optional: Un-park request.		
4. Optional: (Change or) add additional information from the sender of the request or the supporter.		Use Ticket numbers to automatically attach the information to the request.
5. If not done by first level (see C2/5), record a problem cause.		
6. Close request		Ticket can be used for statistics. Ticket is not shown in the list of tickets any more.
7. Notify the sender of a request		The System can do this automatically (e.g. by email) when the request is closed.

D. Work area 2: Statistics

This work area comprises calling the creation, status changes, deletion, changing etc. of trouble tickets in the system.

User profile: *1st level supporter. Supporters with good overall knowledge of the office. They can fix small problems like forgotten passwords or help with software usage problems.*

User profile: *2nd level supporter. Supporters with more detailed knowledge. Often 2nd level supporter are needed to repair things or to go outside the helpdesk e.g. for repairing a printer.*

User profile: *Manager. Person wanting statistics. General IT knowledge, needs pictures, charts, tables as statistics. Wants to identify problems.*

Environment: *Office. IT-Work, computer problems.*

D1. Continuous task: Gather Request Data

This task gathers data needed for statistics, which may be reported to managers later.

Start: *Ticket is changed.*

End: *Change has happened. Change is recorded in the history data.*

Goal: *Track a history of all changes for statistical use.*

Frequency: *Up to 50 Tickets per day may be created; furthermore up to 100 open tickets may be open. There is no information about the amount of status changes and edits.*

Difficult:

Prio: 5

Quality Requirements: *See Subtasks*

Users: *1st and 2nd level supporters, (maybe expert supporters see A1)*

Subtasks and variants:	Prio:	Example solutions:	Quality Requirements:
<i>1. Any property of the request changes.</i>		<i>System keeps track in a history</i>	<i>Any property of the request that changed should be kept track of.</i>
<i>1p. Changes happen externally.</i>		<i>Give access to the experts. Track this later by 1st or 2nd level supporters (also reporting the time).</i>	

D2. Report data.

This task creates a report for managers about the statistics for ticket data.

Start: *Somebody (the role needs to be clarified by the customer) triggers a report.
The system triggers a report automatically (?).*

End: *A report is created.*

Goal: *Create a report and explicitly show times that may be improved.*

Frequency: *(seldom)*

Difficult: *(never)*

Prio: 5

Quality Requirements: *(none)*

Users: *Manager, Supporter*

Subtasks and variants:	Prio:	Example solutions:
<i>1. Define report.</i>		
<i>1p. Show report</i>		<i>To be clarified by the customer!</i>

Use Case Experiment results – Bonn-Rhein-Sieg University of Applied Sciences

Subtasks and variants:	Prio:	Example solutions:
<i>1a. Variant: Report times over a certain threshold (tickets taken to long, etc.).</i>		<i>To be clarified by the customer!</i>
<i>1b. Variant: Report tickets being older than estimated.</i>		<i>To be clarified by the customer!</i>
<i>2. Report to Ticket Owner / Mark in Ticket list view</i>		<i>See Figure 1, line marked in red.</i>
<i>2a. Report to manager</i>		<i>To be clarified by the customer!</i>

E. Virtual Windows

Task	Virtual Windows
	Model Data Non Model Data (Transient Interaction Data)
Create a request	
Login / Logout as supporter	Supporter name password Support Line
Handle and resolve a simple request (Only logged in supporters)	Request List requests assigned to “supporter” unassigned requests (sorted by due date, especially overdue) parked requests (only if reminder is triggered) Request name description status notes due date line supporter employee (request creator) (Is this all we need? – to be clarified by the customer) Supporter List (reassign, assigned to) name email
Handle and resolve a complex request (Only logged in supporters)	Request List Request Supporter List (as in simple request)
Continuous task: Gather Request Data	Request (no visualization required)
Report data.	Request Filter from to time taken time over due ... Request Request History To be defined by the customer. (requires special visualization)

Request List

[Show all tickets](#)

by

Description ▼

Supporter

Status

...

?

My Tickets

Ticket #	Description	Age	Days To Deadline	...	
43	Problem with Word	1d	0	...	
49	Please HELP!	1d	1	...	

Unassigned Tickets

Ticket #	Description	Age	Days To Deadline	...	Assign
30	Toner empty in printer a45.1	3d	-1	...	<input checked="" type="checkbox"/>
45	Antivirus program keeps telling...	2d	2	...	<input type="checkbox"/>
44	Java not installed	0d	2	...	<input type="checkbox"/>
32	Minor problem with...	3d	3	...	<input type="checkbox"/>

Assign selected tickets to

Me ▼

Peter

Frank

...

Assign

Figure 1 - Request List Mockup – Tickets over due-date are marked in red.