†imekeeper vs CATS

Dominik Zalewski
dominikz@genijusz.com

February 25, 2011

Abstract

This document compares †imekeeper to CATS and CATS notebook.
We encourage the reader to try the demo system at

`time.genijusz.com`

using user `demo10` and password `demo10`.

Contents

1 *Why*s and *can*s

In this section we describe what are the most obvious advantages of using †imekeeper over CATS.

1.1 Why is †imekeeper cheaper?

You may find it weird that this comparison starts with cost comparison. But eventually, when it comes to decide which tool you will buy, the most cruicial effect has the price. Let me sketch it in Table 1.

	SAP or MSS/ESS user license	other license
†imekeeper	1	†imekeeper license for every employee
CATS	for every employee	

Table 1: CATS and †imekeeper price comparison

You know how expensive SAP licenses are. †imekeeper license cost compared to SAP license is marginal. Therefore, if you deploy CATS in your company, the cost will be roughly

<div align="center">

X times higher

</div>

compared to the cost of deploying †imekeeper. This is because in CATS you need to pay for every SAP license. In †imekeeper you pay only for **one**.

One may argue that in fact, a lot of employees already have or need to have SAP license for their regular work. This is true, but have you also taken into account the following?

- **Not all** of your employees are working with **desktop computer**. Some of them do not even touch a computer during their regular working hours. Let us take for instance factory workers or field workers. However, those employees would like to view their working time (even if someone else is recording it on behalf of them), apply for absence and so on. They may do it from their home computer through the internet or dedicated PC in the factory. These employees also need software license.

- You may have **subcontractors**. They usually do not need to fill absence requests, they just need to record time. We had experience with a lot of companies that wanted to save on MSS/ESS SAP licenses and they wound up having their subcontractors send excel sheets with working time. As a result there needed to be a dedicated person copying/pasting this information back to time recording system. The other obscure solution was to try to force excel cell formating and develop import scripts that transferred the entries semi-automatically. There were a lot of errors.

So the actual cost saving on deploying †imekeeper instead of CATS is dependent on the ratio

$$\frac{\text{EEs needing SAP licenses}}{\text{EEs not needing SAP licenses } + \text{ subcontractors}} \qquad (1)$$

If (1) is below 1, you will save a lot. If it is above one, then a closer exprtise is needed but there is a big chance that you will still save. If you find yourself dividing by 0, then you will need to spend extra money on †imekeeper licenses (together with SAP licenses), if you want the tool because of the other advantages it has.

But that is not everything in the equation. Did you consider your

<div align="center">

total cost of ownership?

</div>

If not, then please read on Section 1.5 and find how does †imekeeper deployment and upgrade strategy influence your cost. Here, I will simply mention that there

<div align="center">

is absolutely zero cost

</div>

involved internally within your company. What I mean by that statement is that after the upgrade (or first deployment), your administrators will not be spending **any** time reinstalling software on employee's computers.

1.2 Why is †imekeeper different ?

Taking a look at screenshots of †imekeeper and CATS, one could say that the applications are quite similar (Figures 1 and 2).
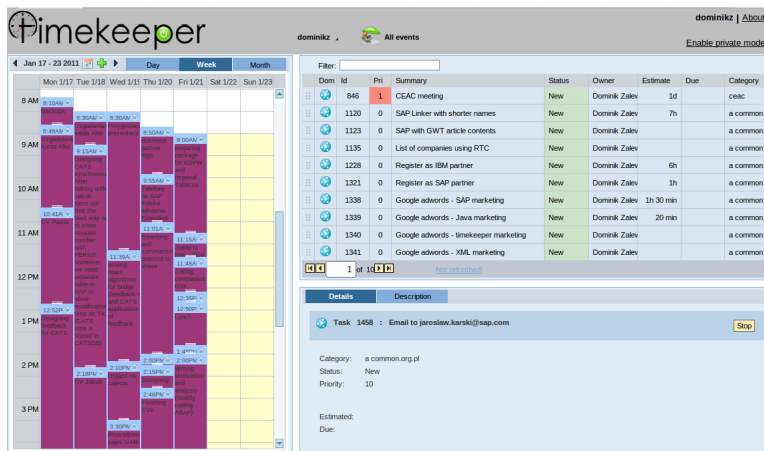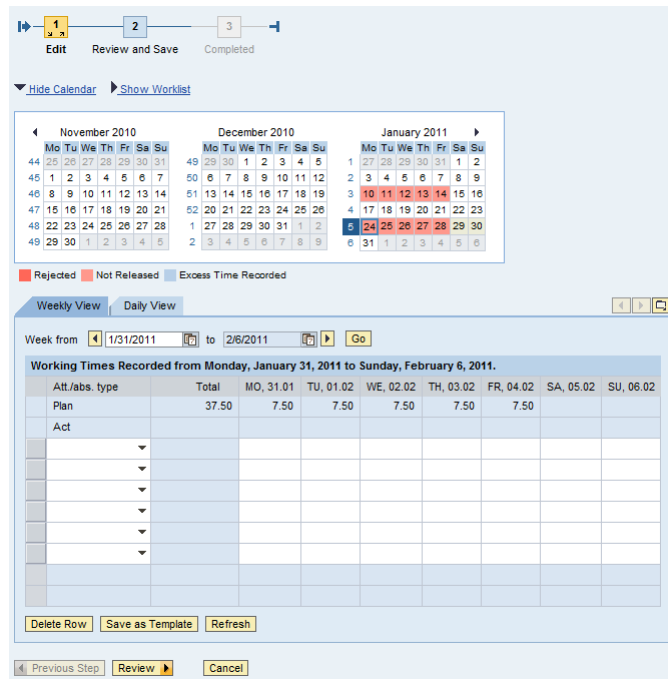

Figure 1: †imekeeper

4

Figure 2: CATS running as a browser application

They both have a calendar with weekly and daily view, where you see your time entries. They also present a list of Attendances/Absences from which you can pick your choice when recording time. However, there is one **fundamental** fact that differs both applications. CATS was designed to record your time **after** you finish your work. On the other hand, †imekeeper lets you

<div align="center">

record your time when you do your work.

</div>

Of course, as a modern tool, it does not force you to use it one way or the other. You can also use it in a *legacy* style and record you time after you finish with your work.

Take a look at lower right part of †imekeeper screen (Figure 1) — we call it **desktop**. Here's what happens if you double-click an item in the upper right part of †imekeeper screen. The item gets dropped on the desktop and a time entry is automatically created in the calendar. You will easily spot a button labeled **Stop** on the desktop. Whey you click that button the time entry in the calendar is stopped from being recorded.

So, if you ever hated the end of your day of work, when you are in hurry to get home but you need to fill your time sheet — start using †imekeeper and you will no longer have that problem.

1.3   Why is †imekeeper fast?

You probably know that nowadays to get from Europe to US and back, it takes less than 100 milliseconds — if you are an internet packet. This is the threshold under which a user feels that an application behaves smooth and feels totally responsive. Why is it that people are still complaining about the performance of web applications — CATS for instance? Isn't it true that for most companies their SAP servers are on the same continent and most of the time even in the same city?

If it isn't for network latency, then it must be the processing time of the server that eats those 100 milliseconds. Well, actually it is this plus the fact that in SAP you always reload the whole page (even if it looks as if you were not) and a couple of other details as well. This is presented on Figure 3. Whenever
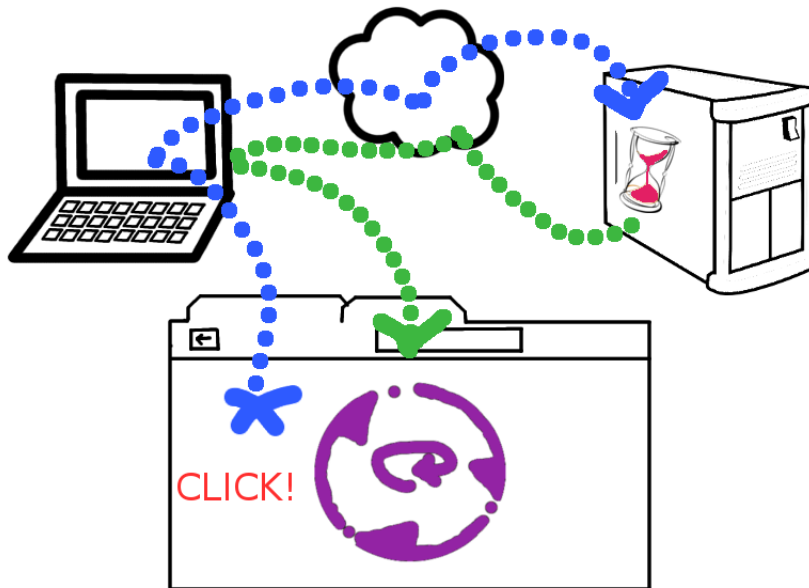

Figure 3: SAP latency

you click in CATS:

- your request gets send through the network,
- the server takes some time to process the request and come up with the response,
- your browser takes the response and renders it on the screen.

In the time between the first bullet and completion of the last one, you have no chance of interacting with CATS.

With †imekeeper it is different. We do it

the fastest way web technology allows nowadays.

If you ever heard of a new **HTML5** standard, this is what we are using. Take a look at Figure 4. Whenever you click in †imekeeper, your request in processed
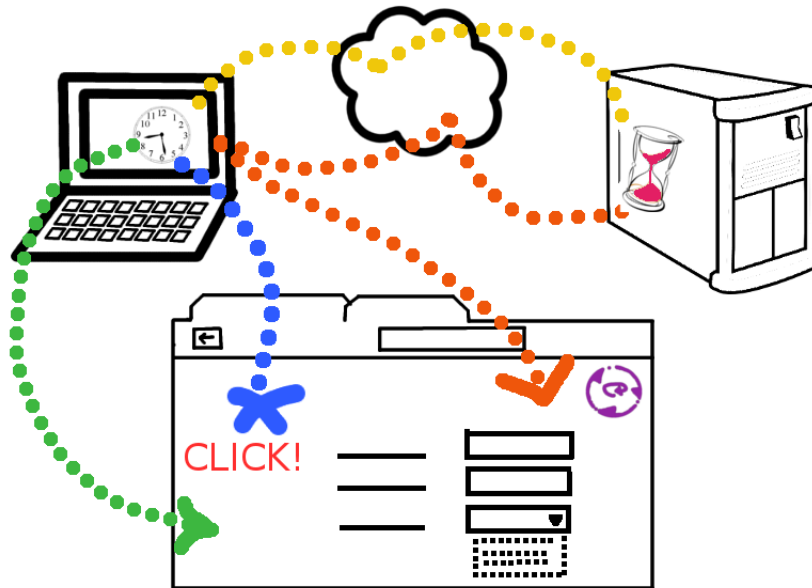

Figure 4: †imekeeper zero latency

on the same computer where your browser is. This way the application can service you with immediate response. Of course, the application still needs to contact the server, but this is done in the background. This is best explained with an example.

Imagine you are adding time entry to your calendar. When you click OK after filling in entry details, you normally needed to wait for this click to be processed (just as on Figure 3). There was no way you can start adding another time entry. Now, when you use †imekeeper, the processing is different. After you click OK on the fist time entry, the application schedules this time entry for sending to server and lets you continue adding more entries. In the background the server is contacted with request to add new time entry. Most of new time entries will be valid, so the server will just acknowledge it. However, if there was an error creating this new time entry on the server, the response from the server will be processed by our application and displayed in the browser.

As a result you will only see a small purple icon (as in Figure 4) meaning that there is some communication with the server, but the application lets you

use itself in the meantime. Compared to **big** purple icon (Figure 3) eating up the whole screen and forcing you to wait, this is a great gain. So, when working in †imekeeper it feels like you are doing your own stream of clicks that are not interrupted by long wait times that the server is taking to respond.

1.4   Can I use †imekeeper anywhere?

There are two questions actually asked, but for both of them the answer is

<div align="center">YES</div>

The first question is about using the application while not having network access. For instance:

- you are a consultant working often at the customer's site with restricted network policy,

- you are a field worker and most of the time you spend on open air or in your car,

- you travel a lot.

With CATS you are forced to use time recording after you finish your work and get back online (described in Section 1.2), what makes time recording imprecise and error prone. One exception to this rule is to setup CATS Notebook (described in Section 1.5), but this proves to be daunting task.

With †imekeeper, you just start your browser and it works

<div align="center">**even without network connectivity**</div>

You probably say — impossible. For years the software has taught us that either you are online and the software in the browser works, or you need to install separate application on your computer to be able to work off-line. Well, remember that we use **HTML5** that has features like offline storage. This allows us to operate without network connection.

The second question is about using the application on various platforms in different browsers. Let us start first by reminding you where does CATS run. The list will not be long. Your choice is Internet Explorer or Mozilla Firefox. Since the former runs only on Windows, in 90% of cases you are also obliged to use this platform [1].

With †imekeeper

<div align="center">**you are not restricted to any particular browser or platform**</div>

When it goes to desktop computers (or laptops) you can use it in any of the following browsers: Mozilla Firefox, Internet Explorer, Safari, Google Chrome. Such wide spectrum of browsers allows you to choose OS different than Windows, for instance Linux or Mac.

---

[1]Starting with NetWeaver EHP2, it will be also possible to use Safari but since EHP2 systems are not yet publicly avaiable, we will not consider this an option

Figure 5: †imekeeper on Android

The technology we've chosen for the development of †imekeeper allows us to support new platforms and browsers rapidly, for instance smartphones. In near future we are going to support Android, iPhone and Opera Mobile. As a starter, we already have a port to Android which is shown on Figure 5.

1.5   Why is †imekeeper easy to deploy ?

Having said about the most important features †imekeeper has, you are probably wondering how much effort is needed to install the tool on employee's machines. You probably recollect the painful experience your company had with CATS Notebook. CATS Notebook was suppose to make offline work in CATS possible but the hassle it was to configure one laptop never payed off. To run the tool one needs to

- have Internet Explorer what basically limits it to Windows OS,
- install Java Runtime Environment,
- install SAP Mobile Engine,

- install CATS notebook (user-independent part).

If you managed to automate this process of installation by system administrators, then the last step was really painful. On every machine separately one needed to install also **user-dependent part** of CATS notebook. This meant that the administrator needed to do it separately with every user or somehow educate the users to do it on their own. And when the upgrade of CATS Notebook was served, no other option than repeat the whole process. You had two choices here: make people do nothing else but installing new version all the time or have employees run outdated software. The latter was usually cheaper, so you could say goodbye to fix packages and fast bug corrections.

So how complicated is it with †imekeeper? You just

give the url to the user and that's it

You don't need to install any additional software on employee's laptop because the browser is already there. Because we support so wide range of browsers, there is nothing to worry about the employee not having correct platform to run the tool. And when the update of †imekeeper comes, then what does your employee need to do?

nothing

Because all we use is standard HTML technology, the application is updated automatically in the browser if we put new version on the server.

OK, I admit that there is one trick here. For browsers not supporting HTML5, you need to install **Google Gears Plugin**. The application detects this automatically and redirects a user to installation page. Installation can be done with one click and no special training is needed for your employee to perform this task. However, since most browsers already support HTML5 features we use or will be supporting them in near future, this statement is outdated in the moment it is being written.

1.6   Can †imekeeper be used together with CATS?

†imekeeper was **not** designed to be a **replacement** for anything. It was designed to be used **together** with systems that existed long before its birth. Therefore, the answer to the quesiton is

YES

We actually recommend using it together with your existing SAP installation. What we are providing with †imekeeper, is an effincient and easy way to gather time recording data: from your smartphone or laptop, when you are on-line or off-line. If you want to use CATS when you're on-line and †imekeeper only when you are off-line, it is your choice. If you decide that half of your employees should use CATS and half of them †imekeeper, you also have that option. Summarizing, our design goal was to give you freedom to choose whatever process suits your company best.

2   Ergonomy

In this section we provide detailed comparison of CATS and †imekeeper user interface. We believe that in the end, it will be the look and feel and the ergonomy that will drive the employees towards one tool or another:

<div align="center">

†imekeeper is all about ergonomy

</div>

2.1   Searching for Attendance/Absence type

When recording time, you obviously need to pick correct Attendance/Absence type. If you have a long list to pick from, you are probably using keyboard to navigate to correct type. Say, you are looking for *Early departure*. You just type the first two or three letters and hope you will be navigated to the item in the list that starts with *ea*.

In CATS it looks like shown on figure 6. You start with an empty item.
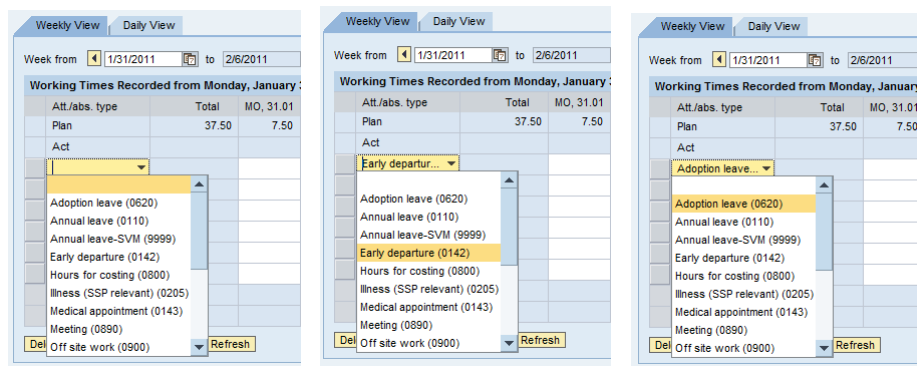
Figure 6: Attendance/Absence type pick in CATS

When you type *e*, you are navigated to the first item starting with letter *e*. If only you did not press the second key to refine your query, you would be on the right item. However, you did press two keys (*ea*) at the same time to give closer match. But CATS does not recognize that and takes you to the top of the list to the items starting with letter *a*. And if you did not know with what letter you attendance/absence type starts with, you would need to look through the whole list. The list is in a drop-down box so scrolling is even harder.

In †imekeeper it works more efficient. You have two options for finding the correct attendance/absence type.

- If you use the desktop to record your time *on the fly* (as described in Section 1.2 on page 4) then you are using task list to find your attendance/absence type (presented on Figure 7).

- If you are creating time entries in a *legacy* style, after you finish your work, then you will be searching for attendance/absence type directly from your time entry window (presented on Figure 8).
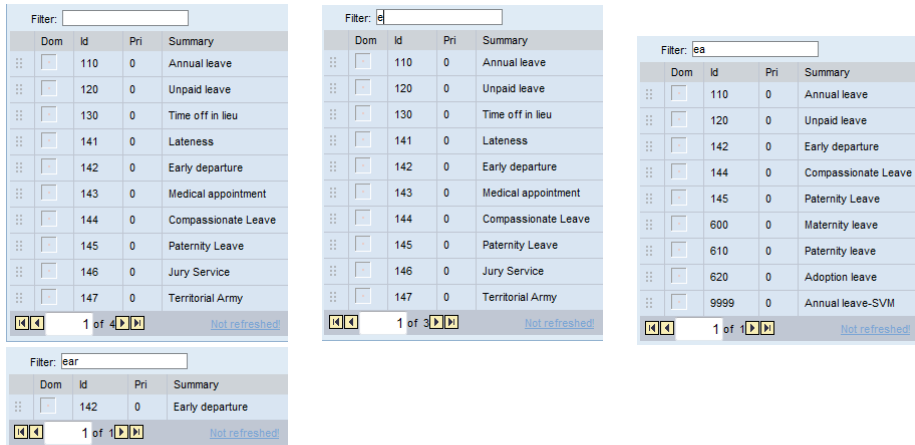

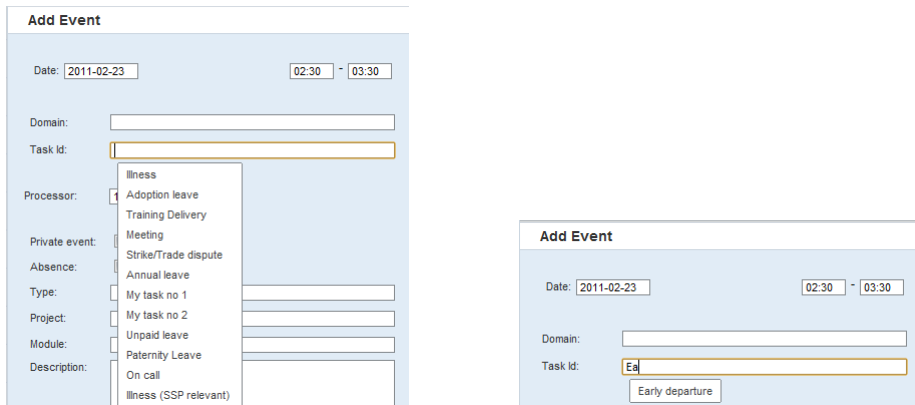Figure 7: Attendance/Absence type pick in †imekeeper task list

Figure 8: Attendance/Absence type pick in †imekeeper new event window

With the first option, you can simply key any number of letters into the *filter* input box. It tries to find a match of what you typed in, it does not necessarily need to be at the beginning of attendance/absence type. Just as in CATS you type in the first letter *e*. Looks like nothing happened, but actually the system filtered out all attendances/absences that did not contain letter *e* (you can see this by noticing that at the bottom now 3 pages of matching attendances/absences are reported instead of 4). Immediately after *e*, you typed

a. Now you see all the items containing string *ea*. Following with more letters (*r*), to refine your query, gives you an exact match.

With the second option it works almost the same except for the fact that a match is only found if you type in the prefix. Take a look at Figure 8 to see the result of your actions.

Now, the filtering is done instantly as you type, so you are probably wondering what is the performance and responsiveness of the application in this case. Remember that in Section 1.3 (page 6) we discussed how †imekeeper is written to be very responsive to user actions. This is the exact example of this behavior. We can come up with filter match very quickly because what you type in does not require contacting the server at all — †imekeeper looks up attendances/absences from a local storage cached in your browser (available through the use of HTML5).

2.2   Filling the details of time entry

The details view of time entry in CATS is presented on Figure 9. As you can see, there is no option to change attendance/absence type, the number of hours or the date. The only way they can be changed is from weekly or daily view (Section 2.5).Actually the only action you can perform in here is to give some meaningful description to time event. This is very inconvenient and does not encourage you to keep your time entries accurate.

Figure 9: CATS details of time entry

Take a look at how the same functionality is realized in †imekeeper (Figure 10). In the details of task entry you can easily change the date or start and end time of your work. All other details are also editable.

The other advantage that †imekeeper has over CATS is that you can easily attach

<div align="center">**additional flags**</div>

(*additional_cost* in the screenshot).

Figure 10: †imekeeper details of time entry

2.3 Viewing daily/weekly/monthly data

Figure 11: CATS viewing of weekly/daily data

In CATS one can only have daily or weekly view of time data. There is no monthly view (Figure 11). The information is not presented graphically, but in

a table. One can only see the number of hours recorded, but not the exact time at which the work was done.
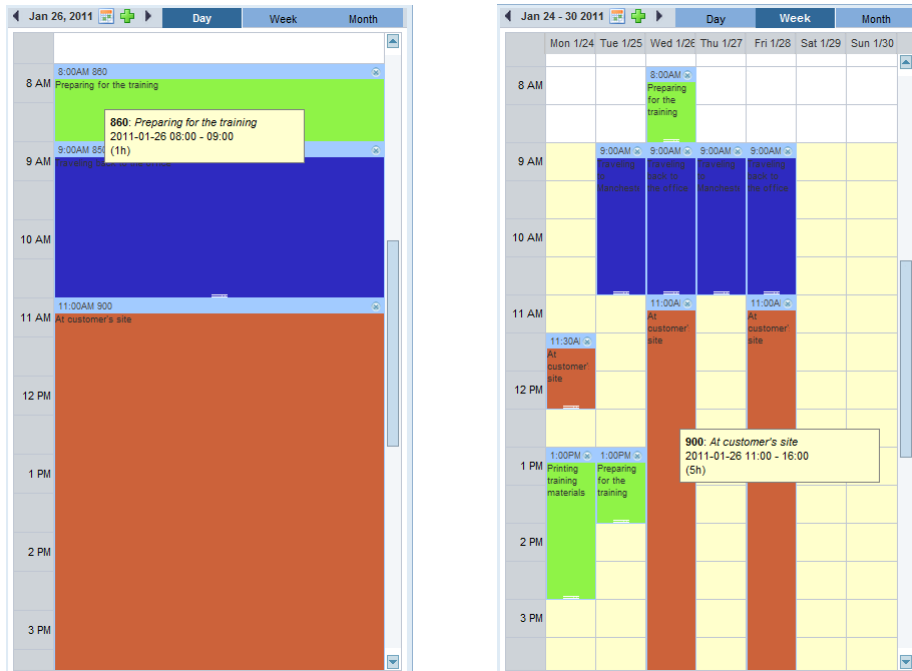
Figure 12: †imekeeper viewing of weekly/daily data

Exactly the same information as in CATS is shown on Figure 12 but in †imekeeper. Notice how **different** approach to viewing the **same data** can **ease** reading the data. You not only see how long you were working on a task (expressed not by number but visually by the length of the box), but also what time you started each task. It is so much easier to spot inconsistencies if the information is presented like this. Read on section 2.4 and find out how easy it is also to correct the data once an inconsistency is found.

†imekeeper also has monthly view presented on Figure 13. It is very useful if you are searching for instance only for absences. This will be described fully in Section **??**.

2.4 Correcting time entries

The other convenient functionality of †imekeeper is the ability to see the details of each task once you hover over an item in the calendar (shown on Figure 12). In CATS, if you wanted to view description of your time entry, you needed to click on the *Details* link in daily view, wait for the page to reload to finally see the description you gave. In †imekeeper it is not only that the description

Figure 13: †imekeeper viewing of montly data

is already there visible on the item in the calendar, but also when you move you mouse over a time entry it will immediately show all the details of this time entry. Consider the time you spend checking the description of **five** time entries if **one** of them needs to be corrected, presented in Table 2. In CATS it takes **13** button clicks to accomplish this task. In †imekeeper it takes only **2** button clicks and **5** mouse overs. Consider also the facts presented in Section 1.3 (page 6). In CATS whenever you click any button, you need to wait for the full roundtrip to server (Figure 3 on page 6). On the other hand, in †imekeeper you do not need to wait for the result of your actions, since the data is available locally on your laptop (Figure 4 on page 7). It will be a good estimation to assume that one button click in CATS takes about 1 second to complete. In †imekeeper we measured the response time of the system an we managed to keep each click under 100 milliseconds (0.1 second)[2]. If we summarize this, the result is astonishing

<div align="center">

†imekeeper **is 13 times faster than CATS**

</div>

in this specific example. We do not claim that you can view all 5 items and correct one of them in one second. Surely, the time to read information on the

---

[2]As a reminder this is the threshold under which a user perceives the system as responding smoothly

CATS	†imekeeper
5 times *Details* click (Fig 11)	**5** times hover over (Fig 12)
4 times *Previous Step* click (Fig 9)	**1** time event click
1 time *Accept* click (Fig 9)	**1** time *OK* click (Fig 10)
1 time *Review* click (Fig 2)	
1 time *Save* click	
1 time *Back to calendar* click	
13 clicks ≈ **13** seconds	**2** clicks + **5** mouse over ≈ **1** second

Table 2: Comparison of correcting time entries in CATS vs †imekeeper

screen and type the correct one will be longer. We do claim that the time you spend waiting for the system, instead of doing your job, will be of the value specified above.

Up until this point we focused on correcting the description of time entry. But there are also other corrections you would like to do:

- change the duration of time entry,

- move time entry to a different day.

In CATS changing the duration of time entry looks very simple, but turns out to be more complicated than it should be. One needs to change the number of hours in a table cell in weekly or daily view (Figure 11 on page 14). If that was it, noone could complain about it. However, if you would leave CATS page and close your browser at that moment, you would loose your changes. You also need to go through two screens (that equals **3** button clicks ≈ **3 seconds**) to save your changes.

It is even worse with changing the date of your time entry. Suppose by mistake you have entered your time sheet data on the wrong day, but specified detailed descriptions for each of them. If now you want to change the date of time entry you have no other option as to delete all the entries and add them again on the correct day. Imagine the hassle it will be to copy/paste all the descriptions.

In †imekeeper you can do both operations using the most intuitive way there is. Just

drag your time entries around the calendar

and you are done. If you want to lenghten or shrink a time entry, again user the same technique. If you need more accurate changes, like changing the duration by one minute, which would be difficult to accomplish with drag and drop, just click on your time entry and edit time or date the same way you edit the description (Figure 10 on page 14).

2.5   Adding time entry

Adding time entry in CATS is just as tricky as correction. It looks like choosing the correct Attendance/Absence type and putting the number in a table is the only action required (see adding *Overtime* shown on Figure 14). However, if you also want to give description to your work, there is no other way than to use the *Daily view* and for each time entry the *Details* link. Again, after making all the changes you need to review them, save them and click a link to get back to the calendar view. According to our previous assumptions this will make you wait **6** seconds in between the clicks alltogether when adding single time entry.

Figure 14: Adding time entry in CATS

In †imekeeper you can follow the same *legacy* path, but as mentioned in Section 1.2 (page 4), the preferred way is to use the desktop. This is presented

Figure 15: Adding time entry in †imekeeper by drop to the desktop

on Figure 15. When you double-click attendance/absence type in the upper right part of the screen, it will be dropped to the desktop (lower right part). As soon as this happens, time entry is created in the calendar that references

attendance/absence type dropped to the desktop. Until you click *Stop* button on the desktop, your time entry will be lenghtened to match the time you spend on the task. During your work, or after you finish, you can add meaningful description to your time entry the same way as shown in Section 2.2 (page 13). To complete the whole process it will take less than **1** second for the system to respond in between your actions.

The *legacy* way of adding time entry is to simply click on an empty area of the calendar. *Add Event* dialog (Figure 10) comes up, where you can put all the details of your time entry. Searching for attendance an absence type was described in Section 2.1.

2.6 Deleting time entry

Deleting time entry in CATS is very unintuitive. You do not have a button entitled *Delete*. You delete cell value in weekly or daily view, followed by *Review* and *Save* steps. This is shown on Figure 16. While these last steps prevent you from accidentally deleting time entry, they will have response time penalty of around **3** seconds.

Figure 16: Deleting time entry in CATS

In †imekeeper you have two ways to delete time entry. One is to click *Delete* button when viewing time entry (Figure 10 on page 14). The other is to do it directly from the calendar by clicking the ⊗ button in the upper right corner of each time entry. This is presented on Figure 17. Choosing one way or the other will issue confirmation dialog that prevents you from accidentally deleting time entry. The operation can be fully performed locally so it takes less than **0.1** second to complete.
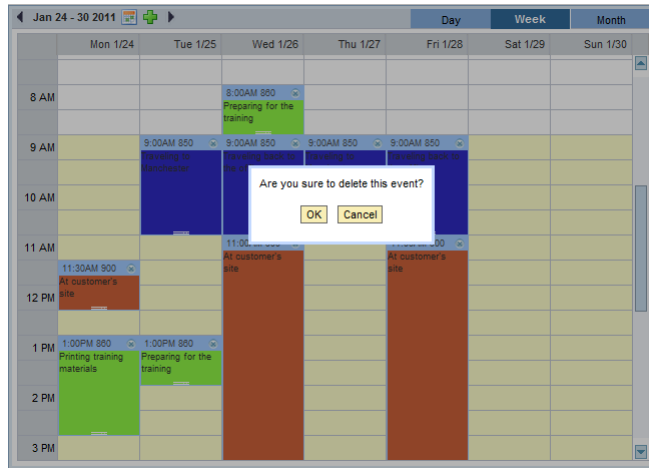
Figure 17: Deleting time entry in †imekeeper

3 Integration

In this section we will discuss various features that †imekeeper has that make it possible to seamlessly integrate it into your company's IT.

3.1 Active Directory and Kerberos integration

†imekeeper has **Single Sign-On** support on operating system level. What we mean by that is that you can configure †imekeeper to automatically login your user whenever the user opens up the application in the browser, provided that you are logged in to your Active Directory (on Windows) or Kerberos realm (on Linux). The way we recommend to use this feature is to put †imekeeper into startup folder. This way, when the user logs in to their laptop, he will already have their timesheet application open and will also be authenticated. This, together with the *desktop* feature, will encourage your employees to keep their timesheets up to date.

†imekeeper is also able to authenticate the user against LDAP user database (for instance Active Directory on Windows). This means that you do not need to administer separate user database for †imekeeper. You can simply use your current IT infrastructure.

3.2 Using in the portal

Up until this point we have shown that †imekeeper can be used as standalone application, started by putting †imekeeper URL into browser address box. However, if you were using CATS, you are probably more familiar with using it in SAP Enterprise Portal (Figure 18).
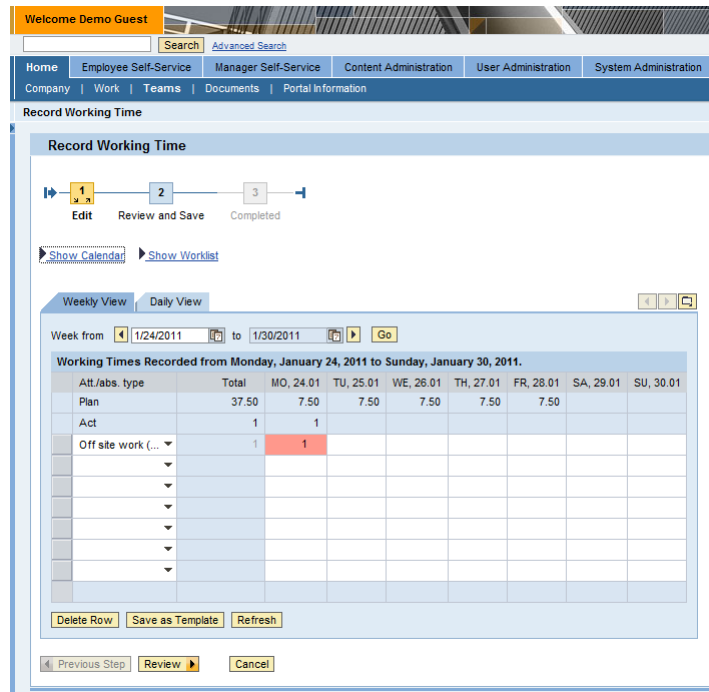
Figure 18: CATS in SAP Enterprise Portal

It is absolutely the same case with †imekeeper. It can be put as an iView into SAP Enterprise Portal without and problems. This is shown on Figure 19.

3.3 Storing private information

If you ever had the problem that you needed to keep two separate calendars: one for professional/work related events (visiting the customer, doing presentations at work, etc.) and the other for your private events (going to the dentist, picking your child from school, etc.), then †imekeeper is here to solve your problems.

As shown on Figure 20, on the right of †imekeeper toolbar there is a link entitled *Enable private mode*. It works like a toggle button. When private mode is enabled, whatever you record in your calendar will have *private flag* switched on (shown on the same Figure at the bottom of *Add Event* box). For time entries with *private* flag switched on, the system will never show them to anyone else but the creator. This gives you freedom to use the same calendaring tool in your work and at home without worrying not to show someone the details of your private life.
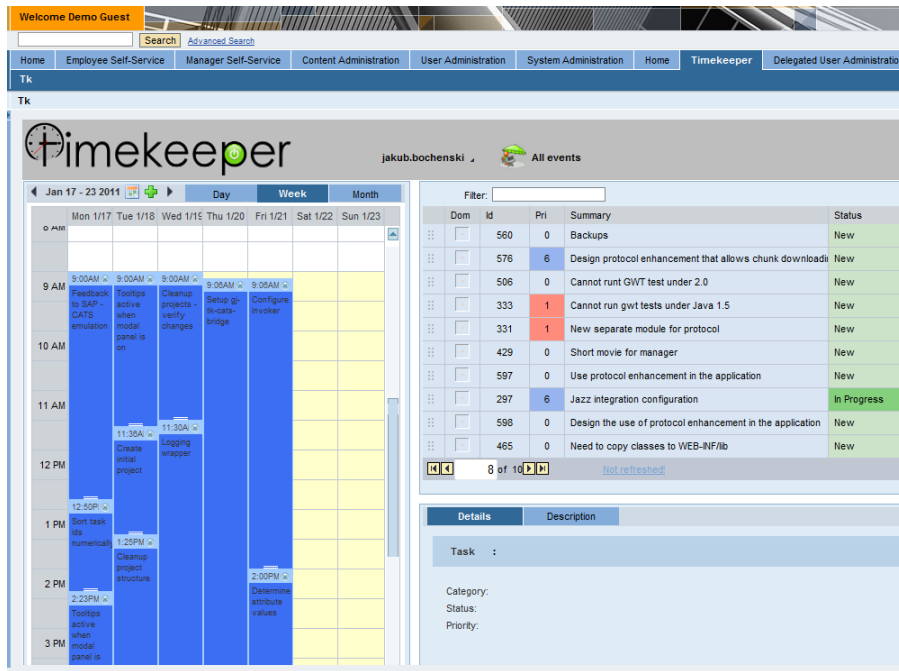
Figure 19: †imekeeper in SAP Enterprise Portal

3.4 Localization

†imekeeper is now localized to two languages (English and Polish). It can be localized without much effor into different languages.
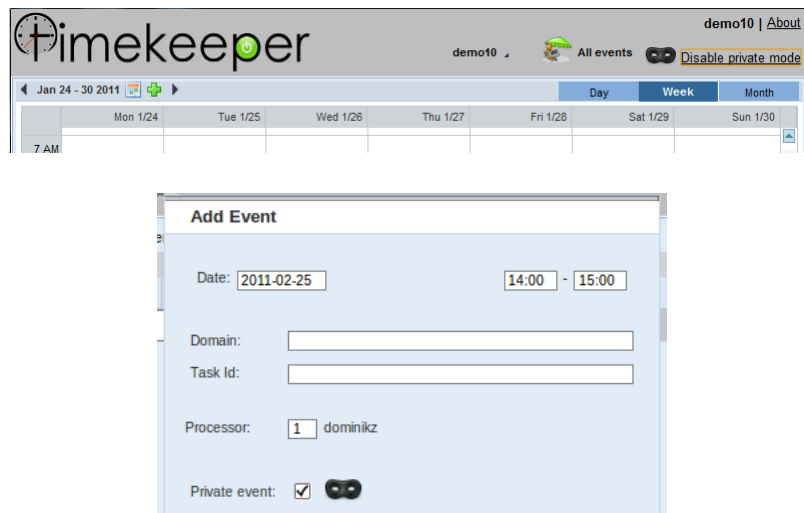
Figure 20: Private information in †imekeeper