

# Background in Web Development

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job applicant



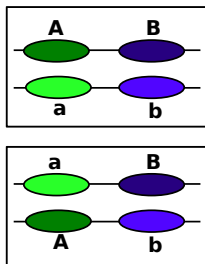
EMBL-EBI  
ChEMBL group

June 3, 2012

- 1 Experience in research
  - Bachelor thesis
  - Master thesis
- 2 Experience at CERN
- 3 Recent experience and current work

# The problem of haplotype frequency estimation – bachelor thesis

AaBb ?



- Determining haplotypes with laboratory methods is expensive and time-consuming.
- In contrast, there are many cost-effective techniques for determining genotypes.
- In general, it could be impossible to infer haplotypes from genotype data.

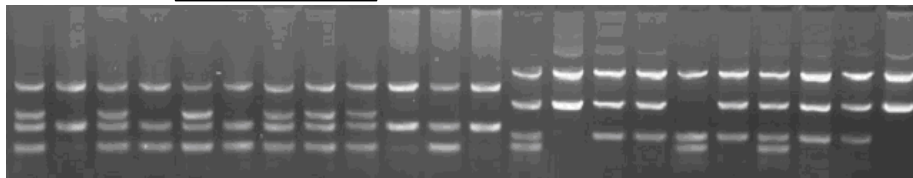


Figure:  
Determining genotype experiment results

# Idea of short overlapping windows

## Problem

Every algorithm employing full space search would operate with  $O(c^n)$  complexity. This is why it cannot be directly applied to phasing long genotypes.

**Solution – Genotypes can be divided into shorter pieces that overlap.**

- Piece length is fixed, so is computation time.
- Phasing  $n$  pieces has now  $O(n)$  complexity.
- Multiple pieces can be phased in parallel.
- If phasing algorithm is convergent total error should not be large.

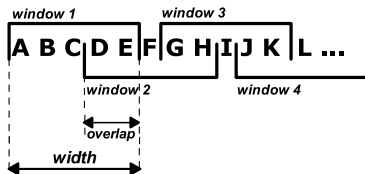
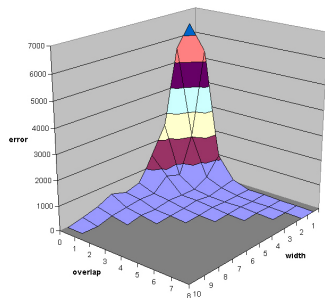
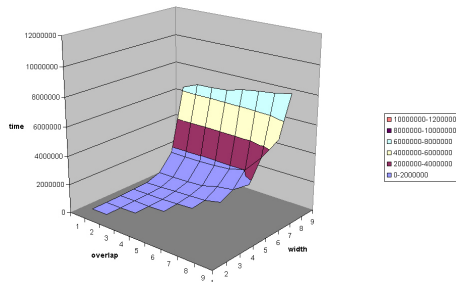


Figure: What are the error and execution time as a function of width, overlap

# Results

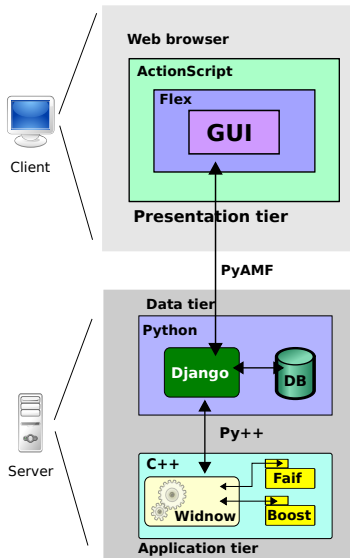


Error as a function of with and overlap parameters



Execution time as a function of with and overlap parameters

# Application architecture



# Automated functional annotation using classification algorithms and data fusion – master thesis

## Functional genomics as a major field in applied bioinformatics

- Functional interpretation is a key step in the analysis of DNA and protein sequences.
- This task cannot be done without availability of extensive functional annotation of the datasets.
- Due to the fast development of high-throughput sequencing technologies, an increasing amount of novel, uncharacterized sequence data have arisen.
- Standardized functional annotation is essential.

## The goal

Provide biologists useful information to take into account when addressing the task of functionally characterizing their sequence data.

# Automated functional annotation – the algorithm

## Input

Uncharacterized DNA or protein sequence.

- BLAST.
- Gene Ontology lookup.
- Data fusion and inference.

## Output

Inferred functional annotation for the input sequence

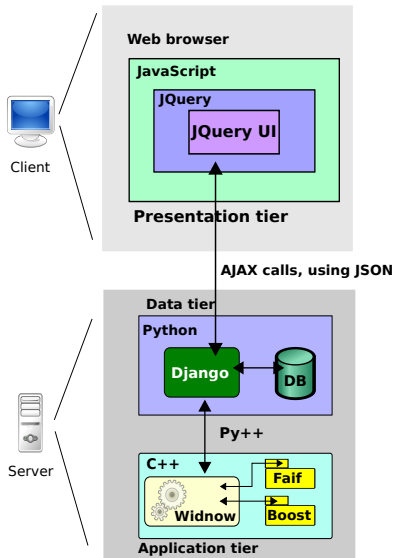


# Inferring functional annotation

For combining multiple results the Dempster's rule of combination is used.

- Often used as a method of sensor fusion.
- Strongly emphasises the agreement between multiple sources and ignores all the conflicting evidence.
- Better alternative to weighted voting.

# Application architecture



# Site Status Board – an application monitoring the behavior of all the centers of a particular VO

- SSB provides a single entry point that summarizes the status of the sites.
- The main idea is to provide a flexible framework which would allow VOs to define multiple monitoring metrics.
- The metrics can be added, deleted and easily modified.
- The most critical metrics can be combined into a single value for each site corresponding to its status.
- SSB keeps the history of how all the metrics have evolved over time..
- SSB consists of three components: collectors that gather information, a database and a web server.


# SSB – implemented features


- XSLT replaced by Java Script template system.
- New coherent GUI.
- Filtering, paging, sorting in Expanded Table, computed on server side.
- Expanded Table ready for large amount of data.
- Redesigned backend.
- Client-side plotting.
- Bookmarking, undo/redo.
- Backbone.

# Old and new SSB

| Index   |                             | Expanded Table | Gridmap                           | Alternative views |                              |  |                                  |
|---|-----------------------------|----------------|-----------------------------------|-------------------|------------------------------|--|----------------------------------|
| Last update on 2015-04-15, 16:27 UTC                |                             |                |                                   |                   |                              |  |                                  |
| <a href="#">Download second location comparison</a> |                             |                |                                   |                   |                              |  |                                  |
| Click to get the address to download the file       |                             |                |                                   |                   |                              |  |                                  |
| TV + TV   |                             | TV             |                                   |                   |                              |  |                                  |
|   | <a href="#">TV_CK_CKPP</a>  |                | <a href="#">TV_AT_Wien</a>        |                   | <a href="#">TV_BE_BSR</a>    |  | <a href="#">TV_BB_DLR</a>        |
|   | <a href="#">TV_CK_FZK</a>   |                | <a href="#">TV_BN_SPOCER</a>      |                   | <a href="#">TV_BN_WBU</a>    |  | <a href="#">TV_CK_CMS</a>        |
|   | <a href="#">TV_KS_HG</a>    |                | <a href="#">TV_CJ_Berlin</a>      |                   | <a href="#">TV_CJ_CSCC</a>   |  | <a href="#">TV_CK_SSTH</a>       |
|   | <a href="#">TV_KS_OTTHM</a> |                | <a href="#">TV_CK_Gesund</a>      |                   | <a href="#">TV_KS_CMS4C</a>  |  | <a href="#">TV_KS_HSG</a>        |
|   | <a href="#">TV_CK_CMC</a>   |                | <a href="#">TV_CJ_C</a>           |                   | <a href="#">TV_CK_CMS3C</a>  |  | <a href="#">TV_CK_SSTV_Video</a> |
|   | <a href="#">TV_KS_ABOC</a>  |                | <a href="#">TV_KS_SPOC_LAB</a>    |                   | <a href="#">TV_KS_HSGC</a>   |  | <a href="#">TV_KS_CMS2</a>       |
|   | <a href="#">TV_KS_BAL</a>   |                | <a href="#">TV_CJ_TWR</a>         |                   | <a href="#">TV_CJ_HH</a>     |  | <a href="#">TV_CJ_Separo</a>     |
|   | <a href="#">TV_KS_MBA</a>   |                | <a href="#">TV_CJ_Pas</a>         |                   | <a href="#">TV_CJ_Pas</a>    |  | <a href="#">TV_KS_SBS</a>        |
|   |                             |                | <a href="#">TV_KS_Wien</a>        |                   | <a href="#">TV_CJ_CJ_Lib</a> |  | <a href="#">TV_KS_HSGP</a>       |
|   |                             |                | <a href="#">TV_CJ_CJ_TWR</a>      |                   | <a href="#">TV_CJ_CJ_HH</a>  |  | <a href="#">TV_CJ_Wien</a>       |
|   |                             |                | <a href="#">TV_CK_CMS3_Berlin</a> |                   | <a href="#">TV_KS_CMS4C</a>  |  | <a href="#">TV_KS_SSTV_24h</a>   |
|   |                             |                | <a href="#">TV_CK_SSTV_CJ_TWR</a> |                   | <a href="#">TV_CJ_CJ_Pas</a> |  | <a href="#">TV_CJ_Pas</a>        |
|   |                             |                | <a href="#">TV_CJ_SST</a>         |                   | <a href="#">TV_KS_HSG</a>    |  | <a href="#">TV_CJ_Pas</a>        |
|   |                             |                | <a href="#">TV_CJ_HSGC</a>        |                   | <a href="#">TV_KS_Wien</a>   |  |                                  |
| TV sending news                                     |                             |                |                                   |                   |                              |  |                                  |
|   | <a href="#">TV_KS_BSR</a>   |                | <a href="#">TV_KS_HSG</a>         |                   | <a href="#">TV_CJ_HSG</a>    |  | <a href="#">TV_CJ_HSG</a>        |
|   | <a href="#">TV_KS_HSG</a>   |                | <a href="#">TV_CJ_CJ_HSG</a>      |                   | <a href="#">TV_CJ_HSG</a>    |  | <a href="#">TV_CJ_HSG</a>        |
|   |                             |                | <a href="#">TV_KS_HSG</a>         |                   |                              |  |                                  |

[Help](#)
[Login](#)

Site Status for the CMS sites, v6.13.9 rc1
 



[Index](#)
[Expanded Table](#)

View: [default](#)

T0 + T1

| Status | Site Name      |
|--------|----------------|
| ✓      | T0_CH_CERN     |
| ✓      | T1_CH_CERN     |
| ✓      | T1_DE_KIT      |
| ✓      | T1_ES_PIC      |
| ✓      | T1_FR_CG2NPS   |
| ✓      | T1_IT_CNAF     |
| ✓      | T1_TW_ASICG    |
| ✓      | T1_UK_RAL      |
| ✓      | T1_UK_RAL_Disk |
| ✓      | T1_US_FNAL     |

T2

| Status | Site Name     |
|--------|---------------|
| ✓      | T2_AT_Vienna  |
| ✓      | T2_BE_IIHE    |
| ✓      | T2_BE_UCL     |
| ✓      | T2_BR_SFRAGE  |
| ✗      | T2_BR_UERJ    |
| ✓      | T2_CH_CSCS    |
| ✓      | T2_CN_Beijing |
| ✓      | T2_DE_DESY    |
| ✓      | T2_DE_RWTH    |
| ✓      | T2_EE_Estonia |
| ✓      | T2_ES_CIEMAT  |


T3

| Status | Site Name        |
|--------|------------------|
| ✓      | T2_FR_IPHC       |
| ✓      | T2_HU_Budapest   |
| ✓      | T2_IN_TIFR       |
| ✓      | T2_IT_Bari       |
| ✓      | T2_IT_Legnaro    |
| ✓      | T2_IT_Pisa       |
| ✓      | T2_IT_Rome       |
| ✓      | T2_KR_KNU        |
| ✗      | T2_PL_Warsaw     |
| ✓      | T2_PT_LIP_Lisbon |
| ✓      | T2_PT_NCQ_Lisbon |

T4

| Status | Site Name           |
|--------|---------------------|
| ✓      | T2_RU_RRC_KI        |
| ✓      | T2_RU_SINP          |
| ✓      | T2_TR_METU          |
| ✓      | T2_TW_Taiwan        |
| ✓      | T2_UA_KIPT          |
| ✓      | T2_UK_London_Brunel |
| ✓      | T2_UK_London_IC     |
| ✓      | T2_UK_SGdR_RALPP    |
| ✓      | T2_US_Caltech       |
| ✓      | T2_US_Florida       |
| ✓      | T2_US_MIT           |

# Old and new SSB


[oddsboard](#)
 Site Status for the CMS sites
 [Found a bug?](#)
[HELP](#)

| Index | Expanded Table | Gridmap | Alternative views |
|-------|----------------|---------|-------------------|
|-------|----------------|---------|-------------------|

Put the mouse over any column header to get the description of the column.  
Clicking on a column header will display the evolution of that column over the last 24 hours.  
 Information is more than 24h old

[illegible]

Help Logs Site Status for the CMS sites. v0.13.0\_rc1

odishboard Index Expanded Table

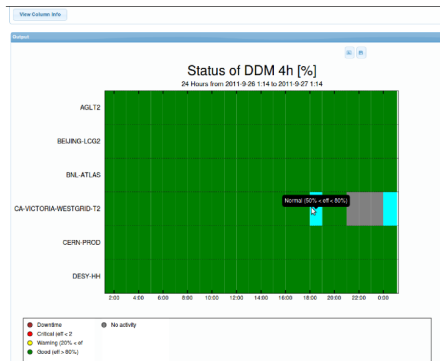
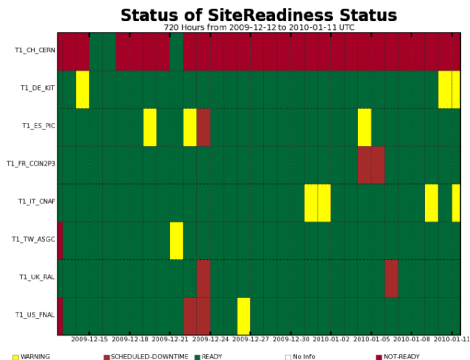
Show 10 entries Copy Print Save color: default Search...

| Site Name      | Visible | JobRobot    | SAM TESTS |     | Production  | Analysis   | Site usage |         | Commissioned Links   |
|----------------|---------|-------------|-----------|-----|-------------|------------|------------|---------|--|
|                |         |             | CE        | SRM |             |            | Running    | Pending |  |
| T0_CH_CERN     | OK      | n/a         | OK        | OK  | 100%        |            |            |         | Current number of running CMS jobs:<br>Rndp: null<br>Dmc: null<br>(last update: 2011-09-24 22:15:05 UTC;<br>last value: 2011-09-26 21:42:55 UTC) |
| T1_CH_CERN     | n/a     | (100%/600)  | n/a       | n/a | n/a         | n/a        | n/a        | n/a     |  |
| T1_DE_KIT      | OK      | (100%/600)  | OK        | OK  | 100%(2533)  | 100%(3)    | 413        |         |  |
| T1_ES_FIC      | OK      | (96%/600)   | OK        | OK  | 100%(1553)  | n/a        | 12         | 1       | 3/5 combined   |
| T1_FR_COMPS3   | OK      | n/a         | OK        | OK  | 100%(5820)  | n/a        | 1056       | 559     | 3/5 combined   |
| T1_IT_CNAF     | OK      | (100%/600)  | OK        | OK  | 100%(7235)  | n/a        | 86         | 14      | 3/5 combined   |
| T1_TW_ARGC     | OK      | (100%/600)  | OK        | OK  | 100%(3995)  | 100%(79)   | 8          | 347     | 3/5 combined   |
| T1_UK_RAL      | OK      | (100%/600)  | OK        | OK  | 100%(1850)  | n/a        | 326        | 2       | 3/5 combined   |
| T1_UK_RAL_Disk | n/a     | n/a         | n/a       | n/a | n/a         | n/a        | n/a        | n/a     | 3/5 combined   |
| T1_US_FNAL     | OK      | (100%/1000) | OK        | OK  | 100%(71477) | 100%(3403) | n/a        | n/a     | 3/5 combined   |

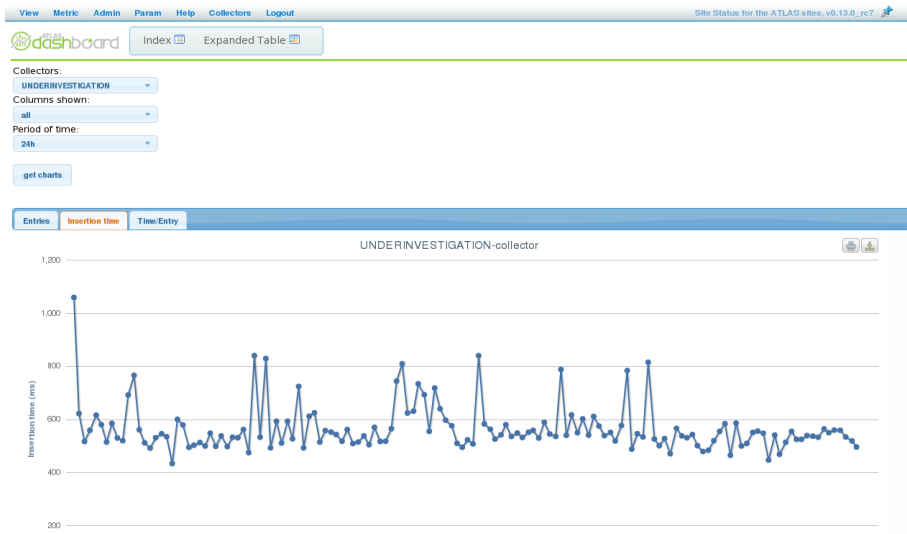
Showing 1 to 10 of 115 entries DB query took 0.0276 s

First Previous 1 2 3 4 5 Next Last

# Old and new SSB



# SSB – collector metainformation



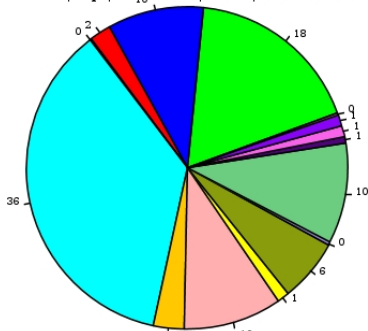


# SSB – TODO

- Tests (jQunit, Selenium).
- Database synchronization.
- Web based installation wizard.
- Getting rid of FOUCs.
- Refactoring of DAO.
- Expanded Table should refresh periodically and highlight recent changes.
- NoSQL for Sieview Data.

## SSB – Impact chart

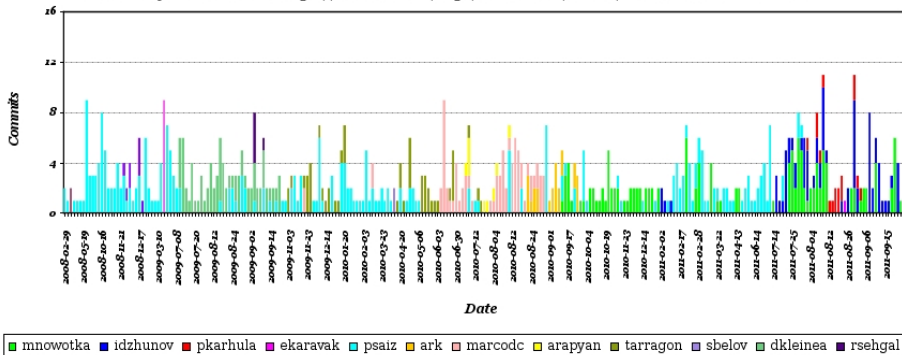
<https://svn.cern.ch/repos/dashboard/trunk/arda.dashboard.siteview>



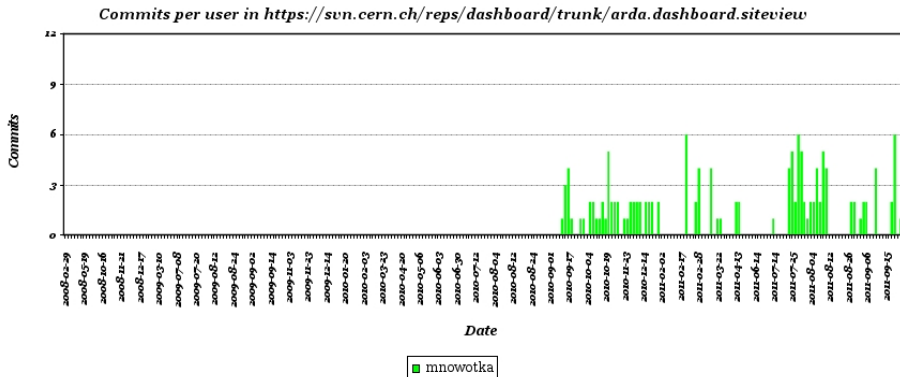
■ idzhunov ■ pkarhula ■ ekaravak ■ psaiz ■ ark ■ marcodc ■ arapyan ■ tarragon ■ sbelow ■ dkleinea ■ rsehgal ■ elisal ■ sic

## SSB – Commits

*Commits for all users in <https://svn.cern.ch/repos/dashboard/trunk/arda.dashboard.siteview>*



# SSB – My commits



# Framework

## Benefits for the dashboard framework:

- Coherent set of tools and libraries.
- Proofs of concepts.
- Authentication mechanisms implemented in framework.
- Better documentation.

# MonAlisa

- Installation on every node.
- Instalation and tuning of ML Repository.
- Alarms.
- New Metrics.

# MonAlisa



## MonALISA Repository



[Repository Home](#) [Administration Section](#) [Events XML Feed](#) [MonAlisa GUI](#)

### Repository

- MonALISA Repository
- Global Views
- Statistics
- Services
- Machines
- Collectors
- Repository info
- Installed packages

close all

This page: bookmark,  
URL

## Dashboard machines' status

What is this s

### Machines status

|                 |             | CPU    |      |       |       | Networking (eth0) |       |            | Busiest disk |          |        | httpd workers |         | httpd now |       | httpd instance avg |       |           | httpd instance total |          |     |  |
|-----------------|-------------|--------|------|-------|-------|-------------------|-------|------------|--------------|----------|--------|---------------|---------|-----------|-------|--------------------|-------|-----------|----------------------|----------|-----|--|
| Host            | sms state   | Online | Load | usr   | sys   | lowlat            | idle  | IN         | OUT          | Util (%) | Device | IOPS          | Running | Idle      | Req/s | Traffic            | Req/s | Traffic   | Bytes/req            | Requests | Tml |  |
| dashb-virtual06 |             |        | -    | -     | -     | -                 | -     | -          | -            | -        | -      | -             | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-board03   | production  |        | 0.04 | 0.667 | 0.103 | 0.131             | 99.08 | 0.176 Mbps | 0.711 Mbps   | 1.601    | sda    | 5.38          | 2       | 98        | 7.491 | 0                  | 3.8   | 46.1 KB/s | 12390                | 107736   | 1.  |  |
| dashb-board17   | production  |        | 0.03 | 1.662 | 0.75  | 0.355             | 97.07 | 87.4 Kbps  | 30.91 Kbps   | 0.997    | hda    | 5.516         | 1       | 7         | 0.017 | 85.31 B/s          | 0.04  | 173 B/s   | 4342                 | 170      | 72  |  |
| dashb-virtual09 |             |        | -    | -     | -     | -                 | -     | -          | -            | -        | -      | -             | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-virtual11 |             |        | 0.16 | 1.217 | 2.1   | 0                 | 96.45 | 0.824 Kbps | 3.868 Kbps   | 0.042    | sda    | 0.817         | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-virtual04 |             |        | 0.42 | 13.73 | 11.01 | 0                 | 74.33 | 1.718 Kbps | 3.393 Kbps   | 0.083    | sda    | 3.083         | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-board11   | maintenance |        | 0.08 | 0.36  | 0.2   | 0.015             | 99.41 | 12.53 Kbps | 22.2 Kbps    | 0.12     | sda    | 4.083         | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-board21   | production  |        | 0.4  | 1.437 | 0.674 | 0.345             | 97.02 | 0.101 Mbps | 0.529 Mbps   | 0.992    | hda    | 5.549         | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-board09   | production  |        | 0.01 | 0.965 | 0.125 | 0.021             | 98.88 | 80.69 Kbps | 0.52 Mbps    | 0.213    | sda    | 3.7           | 3       | 72        | 6.85  | 0                  | 3.59  | 57.5 KB/s | 16384                | 102092   | 1.  |  |
| dashb-board27   | maintenance |        | 0.01 | 0.282 | 0.218 | 0.161             | 99.26 | 2.349 Kbps | 4.166 Kbps   | 0.43     | hda    | 3.017         | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-board31   | production  |        | 0.32 | 1.925 | 0.536 | 17.41             | 79.02 | 95.24 Kbps | 91.88 Kbps   | 19.78    | hda    | 5.699         | 74      | 54        | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-board22   | maintenance |        | 0.05 | 0.33  | 0.362 | 0.201             | 99.07 | 2.458 Kbps | 3.152 Kbps   | 0.572    | hda    | 2.666         | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-virtual07 |             |        | -    | -     | -     | -                 | -     | -          | -            | -        | -      | -             | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-board25   | production  |        | 0.17 | 3.052 | 0.904 | 0.396             | 95.17 | 83.56 Kbps | 51.35 Kbps   | 0.965    | hda    | 9.632         | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-virtual02 |             |        | -    | -     | -     | -                 | -     | -          | -            | -        | -      | -             | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-board23   | production  |        | 0.19 | 0.128 | 0.287 | 9.902             | 89.64 | 2.456 Kbps | 3.215 Kbps   | 16.48    | hda    | 2.066         | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-virtual05 |             |        | -    | -     | -     | -                 | -     | -          | -            | -        | -      | -             | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |
| dashb-board02   | production  |        | 0.01 | 0.069 | 0.184 | 0.127             | 99.57 | 3.987 Kbps | 4.478 Kbps   | 1.427    | sda    | 6.3           | -       | -         | -     | -                  | -     | -         | -                    | -        | -   |  |

# Other applications

- Dashboard for Google Eearth.
- SiteView.



# Presentations

Group meetings presentation:

- jQuery.
- Charting.
- Deployment and load balancing.
- noSQL.
- Architecture of JS applications.

## Twiki articles:

- JS tools and libraries  
(<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/Libs>).
- MVC architecture (<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/ModelViewController>).
- Dashboard services documentation (<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/Services>).
- MonAlisa installation procedure (<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/MonAlisa>).
- Authentication mechanism in dashboard framework  
(<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/Auth>).
- Form handling (<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/FormHandling>).
- Google Earth emergency (<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/DashbEarth>).

# Other

- Contributing to CHEP papers.
- Attending to Daily Ops.
- Attending to CMS Ops.
- Summer Student.

# What I learned

- Java Script technologies.
- Dashboard Framework.
- CERN School of Computing.
- Sys Admin stuff.
- Many interesting lectures (including Richard Stallman and James Watson).
- French course.
- Working in multinational environment.
- Working in large organisation.
- Living abroad.
- Faster than light neutrino.



Development of business applications intended to use by corporate clients:



Orange



T-mobile



Play



Netia

# Horus Workflow

## Horus Workflow

Horus Workflow is used to define and monitor workflow in business processes. It supports the implementation of any number of administrative processes, personnel, management or sales.

### Horus Workflow System Features:

- Support for managing tasks
- The ability to define own processes
- Support for document management processes
- Support for a variety of organizational structures
- Monitoring of user activity (change history)
- Management of the company organizational structure


# Horus Workflow – application screenshot

**WorkFlow** Użytkownik: Janusz Nawrocki

**266+ Nieruchomość | Zarejestrowana**

Przygotuj przetarg Przygotuj umowę

**Dane podstawowe Lokale Media Stawki Umowy**

|                       |                         |                                |   |
|-----------------------|-------------------------|--------------------------------|---|
| Nr zarządzenia        | 12/48C/14/07/2011       | Sposób zagospodarowania        | Na potrzeby jednostek państwowych   |
| Data zarządzenia      | 14-07-2011              | Kubatura budynku               | 10245 m³  |
| Adres (ulica i numer) | Sierakowskiego 90       | Wysokość całkowita             | 16,45 m   |
| Kod pocztowy          | 03-445                  | Długość                        | 30 m  |
| Dzielnica             | Praga-Północ            | Szerokość                      | 30 m  |
| Nr działki            | 216/4562/87/9           | Liczba kondygnacji naziemnych  | 4   |
| Nr obrotu             | 4569/48                 | Liczba kondygnacji podziemnych | 1   |
| Rodzaj użytku         | Ba - tereny przemysłowe | Rok budowy                     | 1956  |
| Nr księgi wieczystej  | 54654/K.VV/44           | Liczba lokali ogółem           | 25  |
| Powierzchnia ogółem   | 4659 m²                 | Zdjęcie nieruchomości          |  |
| Władający             | brak danych             |                                |   |
| Użytkownik            | brak danych             |                                |   |

Przygotuj przetarg Przygotuj umowę

Created by Horus

# Horus Workflow – technologies

Used technologies and libraries:

- Spring
- Maven
- JBoss
- Hudson / Jenkins
- Coffee Script
- JQuery UI



# TMS Brokers Brokerage House



## Tasks and responsibilities:

- Development of financial reporting software
- Supporting promotional campaigns
- MetaTrader API programming

# TMS Brokers – technologies

Used technologies and libraries:

- JQuery UI
- Highcharts and Highstock
- Python
- Django
- C++



**GO4Challenge 2012**  
WYŚCIG INWESTORÓW RYNKU FOREX

**O KONKURSY**  
Zasady i terminy

**RANKINGI**  
Sprawdź  
wyniki

**NAGRODY**  
O co walczysz?

**POLEĆ ZNAJOMYM**  
Zdobądź dodatkową nagrodę!

**EDUKACJA**  
Poznaj rynek FOREX!

**WEŹ UDZIAŁ »**

## RANKINGI

RANKING GENERALNY

RANKING TYGODNIOWY

RANKING DZIENNY

Sprawdź swoją pozycję w rankingu:

**OK »**

| POZYCJA | GRACZ   | STOPA ZWROTU |
|---------|---------|--------------|
| 1.      | Eve     | 1005%        |
| 2.      | GANESZA | 761,41%      |
| 3.      | konkur  | 750,65%      |
| 4.      | STUFF   | 507,84%      |
| 5.      | siwek00 | 396,04%      |

Aktualizacja z dnia: 01-06-2012 23:30:25

NIE BIERZESZ JESZCZE UDZIAŁU  
W KONKURSYE?

**ZACZNIJ GRAĆ O NAGRODY  
CZAS UCIEKA**



**WEŹ UDZIAŁ »**

**ZOSTAŃ MISTRZEM FOREX**

- sprawdź porady i bezpłatne  
szkolenia w sekcji edukacja

**SPRAWDŹ »**



**KOMENTARZ DO WYNIKÓW OSIĄGNIĘTYCH W DNIU 31.05.2012**

# Github

## Source

L<sup>A</sup>T<sub>E</sub>X source of this presentation can be downloaded from github:

```
git://github.com/mnowotka/ChEMBL-job-web.git
```

# Thank you for your attention.