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RESEARCHER

WP5

ACEOLE End of Project

Sebastian Bukowiec, ~~Early Stage Researcher~~

Service Manager

Supervisor: Frans Meijers

Outline

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- **Introduction**

- **Training**

- **Technical work**

- **Transformation**

- **Improvements**

- **Current position**

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Introduction

main market square

me

- **Nationality:**
  Polish

- **Marie Curie Fellow:**
  1st of May 2009 – 29th of February 2012

- **Education:**
  Master of Engineering in Computer Science
  Cracow University of Technology, Cracow, Poland

- **Occupation:**
  Software Engineer in CMS Experiment, Data Acquisition Group

POLITECHNIKA KRAKOWSKA

Kraków

ACEOLE End of Project 15TH SEPTEMBER 2012

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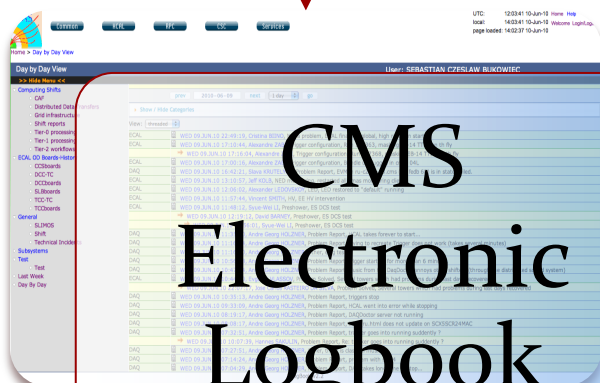
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Training

- **Summary**

  - 4 International Schools – topics: Data acquisition and Computing
  - 2 Language Courses – French and Italian
  - 3 Conferences
  - 3 Management Courses (world-wide recognized certification)
  - 4 Soft Skills Courses
  - 4 Technical Courses
  - 3 Other

  Total: **23 courses**

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Technical work

CMS DAQ Group

my contribution

CMS Electronic Logbook

Future Readout Links

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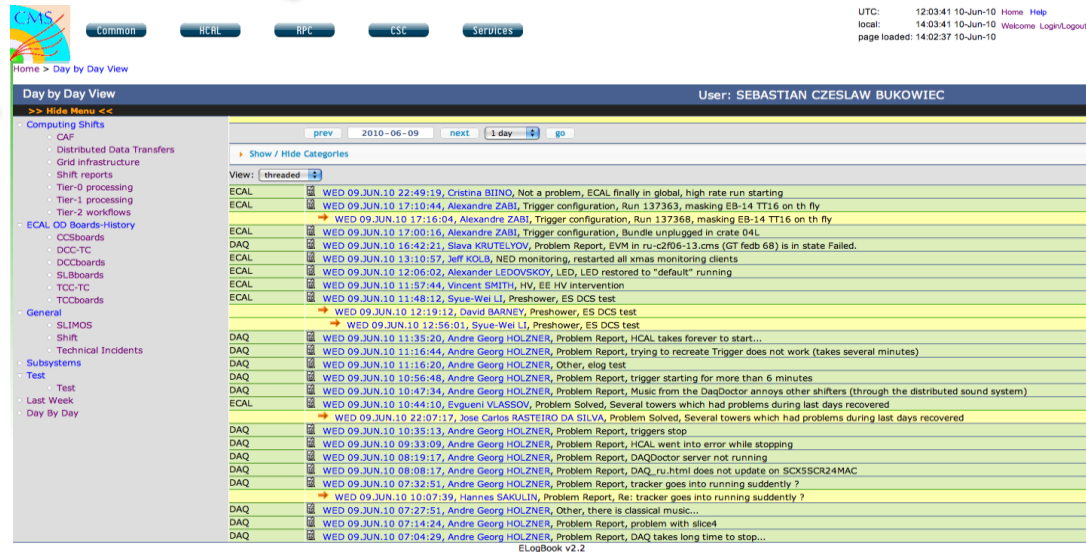
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The CMS Electronic Logbook (ELog)

web application

based on Struts framework

used technologies:

- Oracle Application Server 10g
- Oracle Database 10g

developed using:

- Java
- XHTML
- CSS
- JavaScript
- jQuery & jQueryUI

the entire CMS collaboration, more than 3000 scientists and engineers

from 38 countries, every week creates more than 1500 messages

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The CMS Electronic Logbook (ELog)

- **Achievements**

  - Development environment + SVN

  - Stable version

  - Significant speed improvement (*from 20-30s requests to less than 1s*)

  - New navigation mechanism

  - Sophisticated search system

  - Integration with data from LHC and Run Info

  - New look

  - "Smart" notification system

  - Poster presentation at 17th Real Time Conference in Lisbon, Portugal, 24-28 May 2010 .

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Studies of the future readout links

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The purpose

Research is intended for the upgrade in 2015

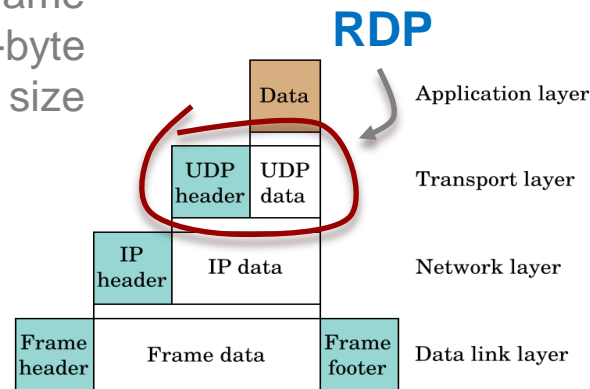speed improvement

old hardware
(failure prevention)

architecture
simplification

Guidelines

- jumbo frames
- optic fiber
- standard hardware components
  like PCs or network switches

Standard frame
1500-byte
payload size

RDP

		Application layer
	Data	
UDP header	UDP data	Transport layer
IP header	IP data	Network layer
Frame header	Frame data	Frame footer	Data link layer

jumbo frame with
up to 9000 bytes of payload

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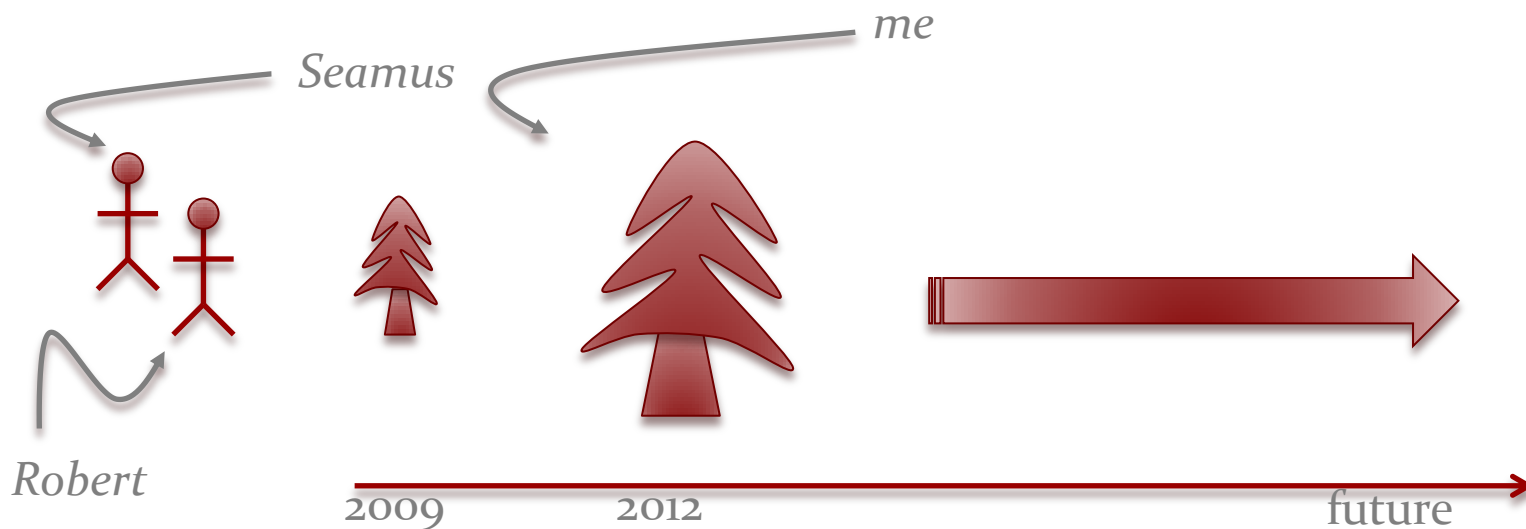
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Studies of the future readout links

- **Achievements**

  - Performance test of several different scenarios and approaches
  - Trigger for a lot of very valuable discussions and brain storming
  - Preliminary results presented at 18th International Conferences on Computing in High Energy and Nuclear Physics (CHEP) in Taipei, Taiwan, 18-22 October 2010.

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Personal transformation

- **Changes**
  - Stronger character
  - Better organization
  - More confidence
  - Technical and Soft-skills improvement
  - Teaching skills improvement
  - Better communication capability

Seamus

me

Robert

2009   2012   future

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Improvements

- **ACEOLE**
  - In the first year of the fellowship I would put more emphasis on management training. In this case - acquired management skills and techniques could be used through the rest of the training. Using them in practice gives much more benefits.

- **EC**
  - Change of requirement about maximum 12 months at CERN before application to 14 months. It will not close the program for technical students who took 2 months extension at CERN.

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Current position

- Service Manager, Engineer (Computing)

  co-responsible for two mission-critical services provided by IT-OIS group at CERN:

  - **CERN Virtual Infrastructure (CVI)**
    hosting more than 3100 virtual machines for different CERN activities.
  - **Computer Management Framework (CMF)**
    automated deployment tools for servers and desktop automation.

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Thank you for your attention!

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