Asset management tools: use and improvement in SOLEIL

P. Betinelli

On behalf of the CMMS working group and computing division
Content

- The duality of SOLEIL
- The diversity of asset management tools
- Plan to streamline asset management tools
THE DUALITY OF SOLEIL
SOLEIL is both:

A **research facility**, open 24h/day, 7days/week to the international scientific community, for fundamental, applied and industrial research.

A **research center** consisting of 29 laboratories, where 150 scientists (permanent staff) carry out their « own » experiments.
A machine with a single coordination, but not always disciplined

- 29 labs (beamlines) with 29 coordinators with different rules and requirement
In operation since 2006

- 1 source
- 24 beamlines open to users
+ 5 BLs under construction / commissioning
- Utilities
  - 3000 RF amplifiers
  - 600 ion pumps
  - 200 magnet power supplies
  - 27000 work orders
  - 80000 topologies
  - 25000 Purchasing requests

More than:
- 2000 motors
- 250 PLCs
- 200 AHU (Air Handling Units)
- 50 Electricity Distribution panels
No strong directive from the management, that means support teams:

- should adapt maintenance strategy and organization for each internal “customers”
- are allowed to define their own rules and to choose their asset management tool
THE DIVERSITY OF ASSET MANAGEMENT TOOLS
The competition between software tools

- **CMMS**: For installation and maintenance of some support groups
- **Bug tracker**: For software maintenance, development and deployment
- **Elog**: Electronic book for experiment and machine follow-up
- **Excel**: For maintenance and installation schedule during machine shutdown
- **Microsoft Project**: For Beamline installation
The follow up of the machine is more accurate.

CMMS and Bug tracker widely used by support teams.

<table>
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<tr>
<th>Tools</th>
<th>Strength</th>
<th>Weakness</th>
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<tr>
<td>Elog</td>
<td>Wildly used by program division for electronic log book, easy to use</td>
<td>Not data mining associated</td>
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<tr>
<td>Bug tracker</td>
<td>Flexible, easy to use, verbose tools</td>
<td>No product life cycle management</td>
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<tr>
<td>CMMS</td>
<td>Product life cycle management</td>
<td>Complex</td>
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<td></td>
<td>Well adapted for maintenance</td>
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PLAN TO STREAMLINE ASSET MANAGEMENT TOOLS
What was our conclusion two years ago?

- Software difficulties encountered with the CMMS tools (Bug, slowness…)
- Difficulties to bring some change in behaviors
  - Acceptation of procedure in a creative world
  - To motivate people under repetitive tasks to keep the reliability of the Research facility
  - To track who does what, when and where with human respect
  - To track the recurrent defective equipment (broken items, MTBF) without feeling of competition
- A complex workflow and model that require adjustment and understanding
  - Codification of topologies
  - Definition of common and pertinent information that we need to track
1. CMMS was adjusted to allow a better understanding: Codification of topologies was improved and simplified.
2. General quality survey has demonstrated:
   - The requirement of Asset management tools is a reality
   - The tool is not powerful and people are not enough trained
3. Establishment of worksite function for each shutdown to centralize the work on the machine.
4. Scientific Labs from the experimental division are moving toward CMMS for maintenance (before Elog was used).
5. A single portal for internal “customers” will be set to access all support (software and hardware).
6. CMMS specific survey to identify how to give better training.
7. External audit on the tools and in order to involve more the management.
Exemple of worksite function

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**Total Tps d'intervention : 516 H 40**
Mantis is our historical bug tracker

- Complex to manage and difficult to interface
- No custom workflow and no project management features

Jira is selected to replace Mantis
(Long and complex migration in progress)

Jira is introduced step by step

- Some well defined tasks are tracked through Jira on the machine side (cf Xavier presentation)

- A dedicated working group is setting up to define the interface between CMMS and JIRA
CONCLUSION
Conclusion: questions to the audience

- Asset management required discipline, method and collaboration of the entire institute
  - People who were convinced, stay convinced. **How to convince others and mainly the management (key actors)?**
  - We have a lot of expectation in JIRA. **Will it really change anything without a strong commitment of the management?**

- What will be the complexity of the implementation of a single portal?
  - **Has the audience any practice on the implementation of a single portal?**

- Our CMMS is still not efficient and takes time to be improved
  - Difficulties to obtain improvement: a small company develops the tool and we don’t inject enough money and time to obtain what we want
  - The migration to another tool is an open question and a part of the motivation for an external audit
  - **Has someone already do the exercise with a big historical database?**
Asset management tools: use and improvement in SOLEIL – P. Betinelli

AMMW2013 workshop 13th – 15th of November, 2013
Our ideal workflow

CMMS
-
Maintimédia

- Topologies
- Stock
- Purchase
- Process Workflow
- Statistics
Topologies: the Soleil Work Breakdown Structure and geographical coding

- Cabinet locations (machine)
- Electron beam (machine)
- Photon beam
Topologies: the standard products and coding

Functional Class

Soleil number

Functional Class

AMMW2013 workshop 13th – 15th of November, 2013
Stock management (1)
Stock management (2)

Movement and Localization

Procurement

Hazard

Class of product

Item

Qty

Procurement

EIL – P. Betinelli
Maintenance workflow (1)

- **Job order**
- **Work order**
- **Brief report**
- **Process sheet**

**Internal Customers** → **Team member** → **Team operator**

**Conditional event** → **Repetitive event**

**Topology movement**

- **Customers**
- **Team member**
- **Team operator**
Maintenance workflow (1)
Reliability (1): the traceability

- **Which**
- **What**
- **When**

**Where**

Asset management tools: use and improvement in SOLEIL

Installation date