

AB-CO Review

FESA

- ▣ The Functionality
 - ▣ The Tools
- ▣ The Documentation
 - ▣ The Support
- ▣ Maintenance & Upgrade
 - ▣ Conclusions

All following requests are missing now and expected to be stable for next start up.

Functionality

FESA General Services

- ❑ Most of the necessary features are now taken care of but quite a few are not fully implemented yet:
- ❑ **Timing interface** needs further work, clarification and investigations, especially in SPS
- ❑ **Process Activity Logging** is not deployed and still uses the old BISCO TO implementation on /user/fesa account
- ❑ **Current FESA-Alarms implementation** has to be reviewed (scaling issues on PPM alarms) and **FESA and LASER DB synchronized**

Functionality

FESA and PS Legacy Clients

- ❑ BDI, CO/FE and CO/DM, made a lot of effort to reduce the impact on PS legacy application software to a minimum.
- ❑ We managed last week to deploy a beam current measurement device (worst case in terms of legacy issue) in the Booster
- ❑ We just need collaboration from CO and OP for this minimum impact during the upgrade preparation (application inventory, working set configuration...) and the commissioning (MD time, commissioners)
- ❑ This nevertheless obliges us to support the old design (in FESA and GM DB) and it would obviously be a lot better if the applications would try to follow the rhythm!

Functionality

FESA and SPS Legacy Clients

- ❑ FESA is not compatible with SLEquip
- ❑ It is currently not possible to upgrade or port the legacy servers to FESA without:
 - Modifying the corresponding applications
 - OR building a 'SLEquip2FESA' adaptor.
- ❑ It seems that all applications can not be re-done or modified before a long time so we expect CO to provide and support a 'SLEquip2FESA' adaptor for the start-up (following sequence switching!)

Functionality

FESA and PLC

- ❑ Adequate for standard cases with solid implementation of communication layers and good support **BUT**
- ❑ IEPLC and FESA databases have to be synchronized
- ❑ Inconsistencies between FESA and PLC data types imply casting and byte swapping in the equipment code. **This should be taken care of elsewhere**
- ❑ Complicated process due to the large number of people to be involved
- ❑ **Some constraints** (one FESA class can only play with one PLC type, block transfer at a fixed interval) **may prevent some applications.**
- ❑ BT still envisages to use direct link to SIEMENS PLC through SIEMENS SOfNET libraries instead

Functionality

FESA and LHC

- ❑ **Multiplexing on different criterium** (BeamType for settings and USER for acquisitions) is necessary for sequence switching in the injectors. We need them for next start-up and **expect FESA to support them before the end of the year.**
- ❑ We expect support from FESA to **help us to make and integrate the Beam Synchronous Timing Receiver event source** (before the end of the year)
- ❑ **Running FESA on a coasting machine may require new features** depending on timing choices (what will be an LHC USER...) and equipment software requirements (we expect ours to be specified in LSAT this winter). **This issue must be analyzed during this shutdown.**

Functionality

FESA and Simulation

- ❑ LHC related timing (in LHC and injection chain) will not or rarely be available in our labs, neither will be complete set of HW boards. In order to implement and test the different proposed scenarios and foreseen hardware, good simulations facilities are necessary
- ❑ The Driver Generation Tool already provides a way to simulate a board
- ❑ We expect FESA to provide a customizable simulated General Machine Timing event source during this shutdown

Tools Design

- ❑ Functionality is OK but
- ❑ On line **documentation** has to be done
- ❑ Editing rights have to be limited per class based on user IDs
- ❑ 'standard' **properties** should come with their standard fields and be visible from APC.
- ❑ **The design tool becomes really slow as design grows.** It takes up to 5' to check the validity of the BTVI design if there is an error!
- ❑ Class naming conventions are necessary
- ❑ See JIRA for the rest

Tools

Deploy

- ❑ Functionality is OK but
- ❑ On line **documentation** has to be done
- ❑ Editing rights have to be limited per class based on user IDs declared in the design
- ❑ The deploy tool becomes really slow as number of classes grows. Point 3 will help there.
- ❑ Deployment still requires manual interventions on CPS and is completely undefined everywhere else. This has to be improved and standardized.
- ❑ See JIRA for the rest

Tools

Instantiation

- ❑ Functionality is OK but
- ❑ On line **documentation** has to be done
- ❑ Editing rights have to be limited per class based on user Ids declared in the design
- ❑ **The Instantiation tool is slow when saving (DB Issue?)**
- ❑ Persistent values should regularly be synchronized with the Instantiation DB
- ❑ See JIRA for the rest

Tools

Navigator

- Functionality is OK but
- Navigation rights have to be limited per class based on user IDs declared in the design
- It should be possible to limit on request the list of cycles to currently running ones

Documentation

- ❑ For the tools, online principle is good, but content is obsolete and incomplete.
- ❑ For the code and behavior, format is good (Overview and Essentials per topics), but content is obsolete and misleading.
- ❑ These documents and online help have to be updated and systematically kept up-to-date with the current version
- ❑ These documents have to include working code examples of the different features implementation.

The Support Online

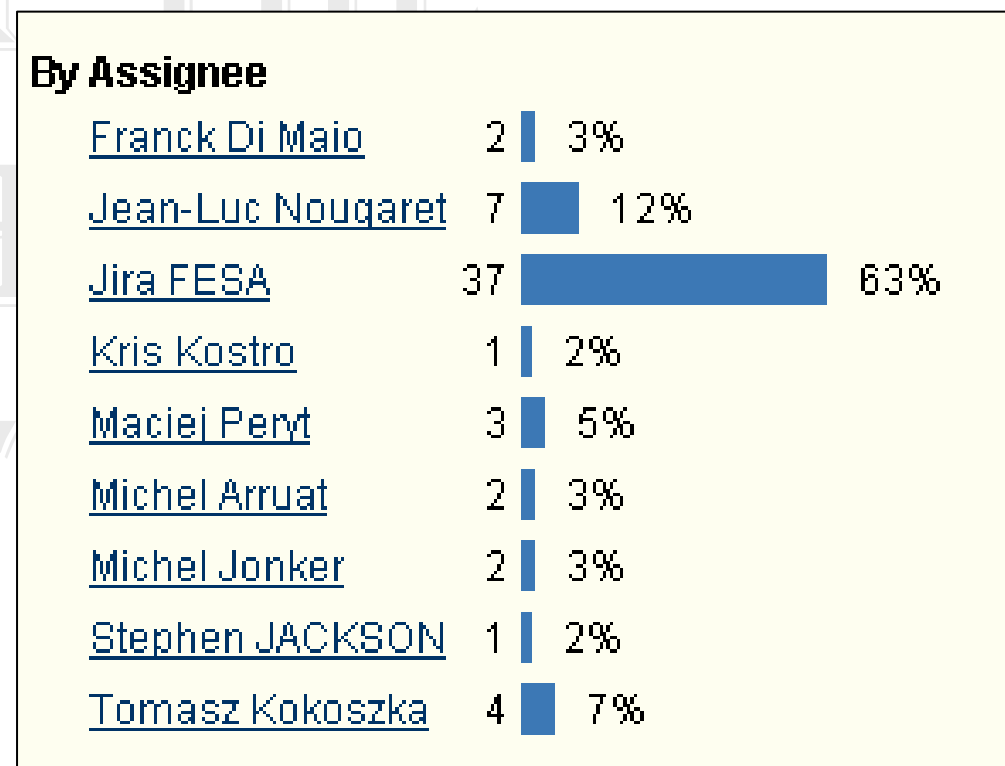
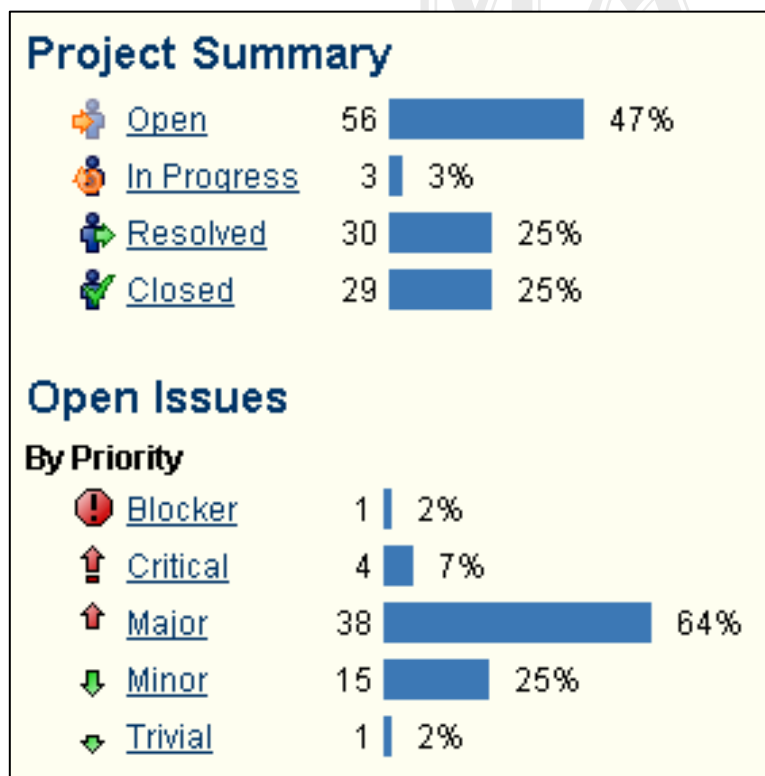
- ❑ Online help is appreciated. Good support and commitment from people involved.
- ❑ Are 2 people (MA et JLN) enough to cover the year ?
- ❑ Consultancy is requested from FESA 'newcomers' on design phase
- ❑ Again, up-to-date documentation would help!

The Maintenance & Upgrade

- ❑ One of our main concern and source of problems so far!
- ❑ Upgrades on the framework should be made with care and transparency.
 - They have to be tested properly
 - Developers have to know what are the modifications and when they occur
 - If there is an impact on existing operational code that FESA can not handle automatically, deployment should wait until the developers give the green light

JIRA Issues

- JIRA should inform users of all new entries
- Some Statistics



Conclusions 1/3

- ❑ The main feeling after our (BDI, BT, RF) first experiences is that **FESA is an efficient and adequate framework** ... **once you know its 'details'** (see Documentation) **and manage to keep up-to-date** (see Maintenance&Upgrade) !
- ❑ **Most of the necessary features are now taken care of** but **some are not fully implemented yet** (see JIRA and this presentation...)
- ❑ **A few important missing features are in the pipeline** and **we expect them before next start-up** (Deployment, timing features, BST event source...)

Conclusions 2/3

- ❑ All AB equipment groups are committed to using FESA framework in the future (partially for PO)
- ❑ BDI is migrating during the present long shutdown as many existing equipment as possible to avoid coming maintenance and resource problems
- ❑ The framework has been used successfully with beam in LEIR and PSB during 2005 thanks to everybody's high commitment and investment to overcome or temporarily bypass the current weaknesses.

Conclusions 3/3

- ❑ This commitment and investment has to be encouraged and pursued on this high level during the coming months to eliminate these weaknesses and cover the missing points before next start-up
- ❑ Equipment groups will then have the effective, solid and supported tool needed to reach the coming deadlines in a correct shape
- ❑ Do not diverge, think too much about it or take a breath now!