

# AB-CO Review Controls for BDI



- ❑ AB-BDI-SW Mandate.
- ❑ Baseline Services Expected.
- ❑ Conclusions.
- ~~❑ FESA-EA-ISOLDE/REX detailed issues are covered elsewhere.~~

# AB-BDI-SW Mandate:

In

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- The **AB/BDI Software Section** provides the software necessary to develop, test, deploy operationally, diagnose and maintain the different instruments produced by the group.

This include the following responsibilities:

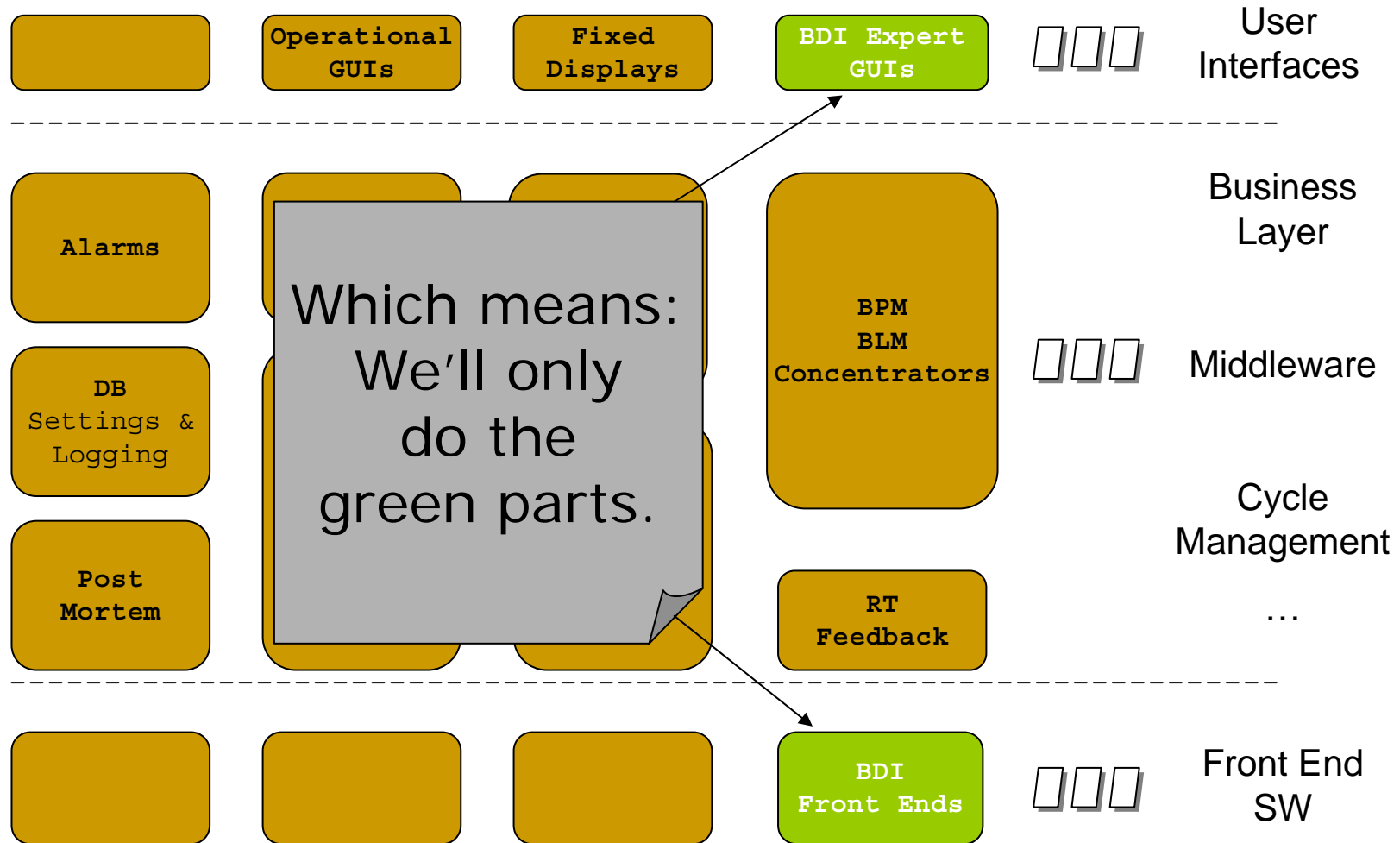
- The **Real Time Front End Software** for our instruments including the remote control communication interface.
- The **Expert Graphical User Interfaces [GUI]** for our instruments.

# AB-BDI-SW Mandate: Out

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- This does not include the following responsibilities:
  - The Operational GUIs for our instruments and related middle-tier software are NOT under BDI responsibility.

# AB-BDI-SW Mandate: Overview



# Baseline Services Expected Now: Color Code

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- ❑ **Green** means OK, i.e. somebody is taking care, we know who he/she is and this support is adequate.
- ❑ **Orange** means that something/somebody is there but things have to be improved.
- ❑ **Red** means that the service is missing.
- ❑ **Gray** means mentioned elsewhere.
- ❑ **Blue** looks nice

# Baseline Services Expected Now: Hardware Selection & Order & Spares

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- We expect CO to **select** (or **design**) and **buy** (or **build**) the standard boards (CTR<sub>x</sub>, RS<sub>xxx</sub>, ADCs, ICV196...) and computers (VME CPU, PC, Gateways, Field buses...)
  - How do we organize new requests for CPU and standard boards for all domains?
- We expect CO to **keep some standard board spares for immediate replacements** **and urgent new requests.**
- We expect CO to **provide a tool showing the current LHC CPU situation**, i.e. how many ordered (for what), received and given.

# Baseline Services Expected Now: Hardware Test & Installation 1/2

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- ❑ We expect CO to test and configure (address, firmware...) the standard modules: CPU, standard boards (CTR<sub>x</sub>, RS<sub>xxx</sub>, ADCs, ICV196...) and Fan Trays
- ❑ Once installed, we expect firmware upgrades (CPU, CTR, Fan Trays...) to be fully in CO's hands with no intervention from BDI apart final tests.
- ❑ Following BDI requests (How?, Who takes care of the infrastructure requests?), we expect CO to configure the DB (Ethernet, standard boards configuration, boot sequence...) so that we can 'plug&play' the crate.

# Baseline Services Expected Now: Hardware Test & Installation 2/2

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- ❑ We fill the crate with these boards and install it (CO did so far in the PS world).
- ❑ We expect CO to provide the tool to remotely diagnose, control and monitor (remote console and reboot, power supply and temperature monitoring...) these crates.
- ❑ We expect CO to provide the tool and recipe for inserting drivers and processes in the boot sequence (the same everywhere).
- ❑ We expect CO to provide the tool and recipe to change a CPU in a few minutes.



# Baseline Services Expected Now: OS Selection & Upgrade & Debugging

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- ❑ We expect CO to select and support the operational Operating Systems (currently Linux, LynxOS and ?WindowsXP?).
- ❑ CO is responsible of their tests, upgrades and debugging (especially for drivers issues).
- ❑ We expect CO to re-compile (but not re-deploy!) the operational front-end code after upgrade (for GM and FESA) and inform equipment developers of any necessary test or change in the code.

# Baseline Services Expected Now: Front End Configuration

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- We expect CO to provide the tool and recipe for inserting drivers and processes in the boot sequence (see installation).
- This tool has to 'communicate' with the FESA deploy DB (see DB).
- IEPLC and FESA databases have to be synchronized (see DB).
- Design & Data Editing and Navigation has to be limited to a configurable set of users.

# Baseline Services Expected Now: Front End Software

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- ❑ We expect CO to support FESA and upgrade it with care and transparency (See Next Presentation).
- ❑ We expect CO to support GM (incl. BODY and GM2FESA adaptor) in the PS world.
- ❑ We expect CO to support the driver generator, integrate it as a FESA tool and upgrade it with care and transparency.
- ❑ We expect CO to provide the drivers and access libraries of the CO standard boards

# Baseline Services Expected Now: Timing

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- ❑ We expect CO to design and provide the GMT hardware, firmware, software and diagnostic tools.
- ❑ We expect CO to integrate the GMT into FESA everywhere and provide sufficient simulation facilities.
- ❑ We expect CO (CO request) to configure the local timing events on request (we suffered from looong instantiation time).
- ❑ CO is responsible for the LHC BOB Master hardware and firmware.
- ❑ We expect CO to add beam type information in the SPS and LHC telegrams.

# Baseline Services Expected Now:

## Data Bases

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- ❑ We expect CO to merge new and legacy, PS and SPS front end configuration DBs together and harmonize the tools.
- ❑ IEPLC and FESA databases have to be synchronized.
- ❑ CO has to provide the tool to insure INB tracing of the VME crates and their contents.
- ❑ We expect CO to make the necessary links between on line DB and offline (layout, MTF) DB
- ❑ What is CO role in terms of AB and AB-BDI quality assurance (MTF, EDMS, naming conventions...)?

# Baseline Services Expected Now: Application Tools 1/2

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- ❑ BDI will as much as possible rely on **OASIS** (under CO responsibility) for the analog signal acquisition in LHC.
- ❑ But **a few cases** will probably exceed OASIS capacity and some devices (fast oscillo...) will have **to be controlled through LabVIEW**. We also count on CO for these applications.
- ❑ We expect CO to be responsible for **the video transmission from LHC to CCC and Equipment Labs and corresponding applications** (matrix control...)

# Baseline Services Expected Now:

## Application Tools 2/2

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- ❑ We expect CO to provide and support a replacement of NODAL for quick, disposable hardware expert programs for FESA (*Jython*).
- ❑ We expect CO to maintain a proper *Mathematica* (incl. *Mathlink*) installation on both Linux and Windows operational platforms.
- ❑ We expect CO to supply and support the following packages used in our expert GUI's:
  - Adequate Java Dataviewer.
  - GMT synchronization and introspection (C++ and Java).
  - C++ and Java interface to FESA servers.
  - Storage space for MD's and corresponding Java interface.
  - ...

# Baseline Services Expected Now: Application - Legacy

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Our men/months to maintain BISCoTO and FESA#1 have been transferred to FESA#2. So:

- ❑ **SPS Legacy software issues have to be tackled** (could be on FESA camp via a SLEquip2CMW gateway)
- ❑ Our CPS SW consolidation effort has been approved and financed by the department (2 Russian collaborators) and is based on FESA like agreed in 2003. BDI/SW, with CO/FE and CO/DM, made a lot of effort to reduce the impact on legacy software to a minimum. **We want to know who to contact for this minimum to be done.**
- ❑ **AB/CO/AP and AB/OP have to clarify their respective responsibilities for these legacy applications.**



# Baseline Services Expected Now: Application - New

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- ❑ It has been decided in 2003 that BDI will not supply operational GUI's and corresponding middle tier software. **But we have to interface together.**
- ❑ We work with CO/AP (Vito) for LEIR and EA North - with OP (Jorg) for SPS – with OP (Mike) for LHC and found nobody yet willing to renovate applications in the PS complex. **There also, the respective mandates of AB/AP and OP is not crystal clear.**
- ❑ **We need a 'Jorg' in the PS world**
- ❑ **We expect LHC sector test instrumentation software requirements (BPM, BLM, BCTF, BTV) to be published by the end of the year (LSAT). LHC full ring by Q2 2006.**

# Baseline Services Expected Now: Piquet & General Services

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- We expect CO to provide and support the infrastructure and software related to Alarms, SW and HW interlocks and LHC Postmortem
- We rely on these services (including timing) to develop our software. We need CO to provide them as much as possible during shutdowns
- We would be in favor of CO providing a Piquet service 'a la PS' all over CERN for all GM and FESA software but specific LHC issues may have to be considered

# Conclusions (1/2)

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- ❑ We need and expect these services now and corresponding improvements soon.
- ❑ For each of these services, we want to know **who** (human beings, not sections) does and does not **what** and **where** in CO for the 2 coming years especially when things change.
- ❑ We'll **rely more than ever on AB/DM tools** for front end hardware inventory and software design, deployment and configuration. **Be good and quick on CPS/SPS/LHC harmonization!**

# Conclusions (2/2)

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- ❑ There is still a lot of work ahead but we are confident that we can have an effective FESA tool and solid organization around (FC/DM/HT&BDI) to face the important software front end coming deadlines (see FESA Presentation).
- ❑ We are less confident that the amount of work to do can be digested on the application and middle-tier side
- ❑ This lack of confidence is maybe just due to the fact that we don't work so close together for such a long time like with FESA.  
So let's do it.