Use of E-Logbook in VEPP-5 Control System

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Abstract

An electronic logbook (e-logbook) becomes a must for large experimental facilities not only during operation, but also at building and commissionning stages (where VEPP-5 is now). Unfortunately, the "market" of such products is almost nonexistent. So, the choice is narrow: either use some other lab's software (adapting it for local needs) or create your own one from scratch. We have chosen the former way and picked DOOCS e-logbook from DESY. Main changes concerned localization (since Russian uses cyrillic letters, not latin) and data feeding mechanism (due to different model of logging from applications). Integration with GIS and alarm system is being examined.

Needs and Conditions

➲ E-logbook is a must for large control system

☹ No "market" of such software.

1. Create our own from scratch? No manpower!
2. Use some other lab's e-logbook software? Yes!

?. Which e-logbook software to choose?

Requirements

- Web access
- Free software (and Linux support)
- Adaptable for VEPP-5 needs

Choice...

http://docdb.fnal.gov/ILC/DocDB/0002/000292/005/Elogs.pdf

DOOCS E-Logbook: reasons

- Is a complete product
- Easily available, has a web-site w/demo
- Requires just Apache+Tomcat+Java - readily available in most distros; only free software!
- Has moderate size, grokable and changeable
- Still maintained by original author

1. Localization

The problem:

- DOOCS E-Logbook – DESY – target languages are English & German – so, it assumes all text to be ISO8859-1.

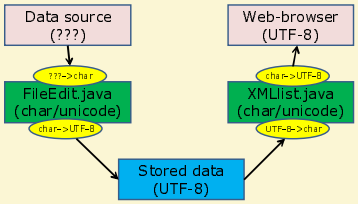
⇒ Russian (Cyrillic) letters result in unreadable text – like `роза` (numbers represent Unicode positions of non-Latin1 characters).

☹ Absolutely inappropriate for VEPP-5, as our main language is Russian!

Solutions:

1. Re-wire to KOI8-R? No, dead-end track
2. UNICODE and **UTF-8** – de-facto standards in modern systems. Allow to represent all characters of all living languages simultaneously.

UTF-8'ization:



Since Java internally uses Unicode, the task was to introduce correct charset conversion at servlets' boundaries.

2. Logging methods

DOOCS E-Logbook:

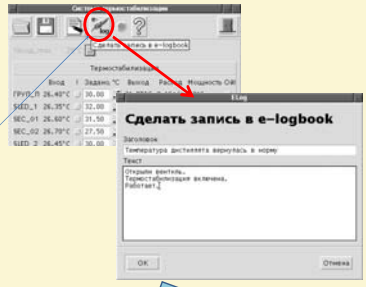
- Browsing via web
- Logging:
  1. Via web-form – for manual input
  2. "Virtual printer" – for applications,

VEPP-5 reality:

- Virtual printer uses LPD, not CUPS (which manages printing at VEPP-5).
- Cyrillic PostScript is too complicated.
- Apps already have their own, text-oriented logging mechanisms.

VEPP-5 E-Logbook:

- Manual input – via web.
- Apps log via HTTP, using newly-developed `DoELog()` C API.
- Standalone utility for scripts – `elog` (wrapper around `DoELog()`).
- Each GUI app has a "Make e-log record" button, giving user a shortcut for making subsystem-specific notes.



Conclusion

- E-Logbook is a welcome addition to VEPP-5 control system's infrastructure.
- Most staff hold the opinion that E-Logbook should have been deployed "the day before yesterday".
- Choice of DOOCS E-Logbook proved to be a right decision:
  1. It allowed to get a full-featured e-logbook with modest efforts.
  2. DOOCS E-Logbook organization makes adapting it to VEPP-5 needs a simple task.

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