

OSP Instructions for Contributors *

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1 Introduction

The Hall A [1] OSP (Operation Safety Procedures) document describes the systems, devices and procedures used in Hall A, containing the safety issues. The systems include, for example, the HRS scintillation counters, the HRS magnets, the Moller polarimeter etc.

Many Hall A collaboration members contributed to the Operating Safety Procedures (OSP) document. This writeup gives instructions for the contributors [2].

2 OSP Document Source

2.1 Document Format

The source document is in L^AT_EX format. The output OSP document is available in two formats:

- PDF, produced with `pdflatex` command;
- HTML, produced with `latex2html` command.

This makes certain requirements to the source document, since both `pdflatex` and `latex2html` have their own peculiarities.

2.2 Obtaining the Source Package

The source package contains the source of the text, the pictures and tools to make the document. It is kept in the CVS [3] format. The repository is located at JLab at:

`/group/halla/analysis/cvs/tex/osp`

and is available for those included in the UNIX group `a-doc`. In order to change the source you have to check out the source (make your personal copy), edit the source files and commit your changes (write down your changes into the repository). Use a JLab machine, with mounted `/group`, say `jlab1`, `dlha1` etc.

- Declare an environmental variable `CVSROOT=/group/halla/analysis/cvs`;
- `cp /home/gen/.cvswrappers ~/` - provide a CVS wrappers file, defining the binary files in the repository;
- Let us assume you want to keep the source in the directory `~/tex/`, type `cd ~/`;
- `cvs checkout tex/osp` - a source tree directory `~/tex/osp` should appear.

2.3 Platform to Use

In section 2.2 it was assumed that a Linux (or a UNIX) platform is used. In fact, one can checkout the source from a MS Windows command line. I did it as follows:

- `cd j:` - go to the UNIX home directory;

- `cvs -d :local:m:/halla/analysis/cvs checkout osp/cvs;`

Unfortunately it is all I was able to do on MS Windows. The scripts and Makefile did not work - at least without a major change. Also, I did not find `pdflatex`.

I recommend to use a Linux¹,

machine to check out the code and build the documents. There are only a few commands to be typed in the UNIX command line - the `cvs` commands and the `make` commands. I suppose that editing and browsing can be done in the MS Windows environment, if one prefers it.

2.4 Source Package Structure

The `tex/osp` directory has the following structure:

`CVS/` - CVS data
`cvs.template` - a template to add to new files
`misc` - miscellaneous documents - not used regularly
`scripts` - auxiliary scripts and the makefile
`src` - the \LaTeX code

2.5 OSP Document Information Level

One can create the OSP document with different levels of details (noted as *infolevel*), the lower the value, the more slim is the document. All the levels contain the basic safety information for every system. Additional information depends on the level:

- 0 - a short (1 page) description per system including a picture for the layout if needed;
- 1 - plus a description of the system's components;
- 2 - plus a description of the procedures and pictures, like MEDM windows in PNG format;
- 3 - plus the main principles of the devices' operation;
- 4 - plus photographs and other large pictures.

2.6 Making the OSP Document

In order to produce a document at a certain *infolevel*, say 4, one has to create a work directory `run`:

`cd tex/osp` - go to the top package directory;
`./scripts/config osp 4` - create the work directory `run`.

At first the PDF document should be built, the HTML document can be built afterwards:

¹A relatively new version of `tetex` package should be used (at least `tetex-1.0.7-47.1` or more recent), generally available at JLab Linux computers.

```
cd run
make pdf - a file osp.pdf is created;
make html - a directory osp_html is created.
```

The created documents should be copied to the proper destination be hand.

2.7 Making other Documents

This writeup can be produces similar to the OSP document:

```
./scripts/config doc 0 - create the work directory run.
cd run
make pdf - a file doc.pdf is created;
```

2.8 Updating Your Source

The repository can change at any moment, when people commit their changes. In order to update your source (match it with the repository) of, for example. directory `run`, you should: :

```
cd src/hrs
cvs update -A
```

Other useful commands, helping to compare your source with the repository:

```
cvs status
cvs diff
```

3 Editing the OSP Source

3.1 The \LaTeX Files

The \LaTeX files are stored in subdirectories of the directory `src`:

- `beamline/` - the beam line equipment;
- `bibl/` - the bibliography, in the BIBTEX format;
- `checklist/` - checklist templates;
- `common/` - general style and preamble files;
- `controls/` - the slow controls;
- `daq_trig/` - the DAQ and trigger;
- `doc/` - this document (not used for the OSP);
- `hrs/` - the HRS arms;
- `hrs_det/` - the HRS detectors;
- `introduction/` - the introduction and access description;
- `offline/` - the offline analysis;

`osp/` - the top file and the title;
`people/` - a list of the personnel;
`targets/` - the targets' description.

For example, the directory `hrs/` contains:

`AlignmentOps.tex` - alignment section;
`all.tex` - a file containing a list of L^AT_EX files in the directory to be included, and some other definitions;
`figs/` - a directory for the files with pictures;
`hrs-1999.tex` - HRS section;
`nmr-1999.tex` - NMR section.
`vacuum.tex` - vacuum elements in the hall.

All the directories used, apart from the “top” one `osp/`, contain a file `all.tex` for steering and a subdirectory `figs/` for the pictures.

3.2 Pictures and Formats

The pictures for all the sections in a given directory are stored in a subdirectory `figs/`. The following formats are accepted:

`pdflatex` - PDF, PNG, JPEG²
`latex2html` - Encapsulated PostScript, PNG, JPEG

The picture (say, layout) can be presented by either one file (`layout.png` or `layout.jpg`), or by two files: `layout.eps` and `layout.pdf`. For the Encapsulated PS, `.epsi` files can be also used. In fact, `.ps` files can be used, if they contain the `BoundingBox` command. The tools to convert the formats are:

`ps2epsi` - PS → EPSI;
`epstopdf` - EPS → PDF;
`pstops` - rectify a PS file;
`eps2eps` - rectify an EPS file.

The last two commands are needed sometimes, to make a file “more standard” and usable for other format converting programs³.

The computer screen windows, like the MEDM ones, can be easily grabbed using the command `import tmp.png` and clicking with the mouse on the appropriate window. A file `tmp.png` will be created.

In L^AT_EX, a command as

² I notices a limitation for the JPEG picture size, but do not know exactly what the limit is. A 1800x1300 picture did not work, while a 900x1200 picture did. One can use, say `xv` to truncate or squeeze pictures.

³EPS files produced by Adobe Illustrator had to be processed by `eps2eps`, otherwise the `BoundingBox` command was not seen by the `epstopdf` command

```
\includegraphics*[angle=XX,width=\texwidth]{xxxx}
```

should be used. No extension (as `.eps`) should be given in the file name. Neither the directory name `figs/` should be given. It is better to use `angle=0`, since `latex2html` contained a bug for calculating the limits of a rotated picture, reducing the picture to a line at 90 and 270°. If there is a need to rotate the picture in PDF, do as here:

```
%begin{latexonly}
\includegraphics[angle=90.0,height=20cm]{xxxx}
%end{latexonly}
\html{
\includegraphics[angle=0,height=20cm]{xxxx}
}%
```

The first and third lines are recognized as commands (not comments) by the package `html.sty`.

It is easy to rotate an PS/EPS picture using `ghostscript`, in order to avoid rotating it in \LaTeX . A script from the OSP package can be used to make a -90° rotation:

```
osp/scripts/psrotat input.ps output.ps
```

3.3 Selecting the Information Levels

As explained in section 2.5, one can attribute to a part of the document a certain information level. This part will appear on the output if the document is made with the information level flag `infolevel` not less than this level. For `infolevel=0` only the unmarked pieces will appear on the output. The following commands can be used:

```
\infolevone{ ... }
\infolevtwo{ ... }
\infolevthree{ ... }
\infolevfour{ ... }
```

The selected parts can be long and can contain sections, figures etc.

In a slim document, produced at a low information level, one may want to say something like “For details see the full document ... URL ...”. Let us assume that the missing information belongs to the information level 4. Then, in order not to print this sentence for the documents at the level 4 (since these “details” are present), one should use:

```
\infolevltfour{For details see the full document ...URL...}
```

The sentence will be printed only if the current information level is less than 4. There are similar commands for different information levels of the information required:

```
\infolevltone{...}
\infolevltwo{...}
\infolevlthree{...}
```

3.4 Selecting the Safety Information

A section or a sentence dedicated to the safety issues should be marked as a \LaTeX environment:

```
\begin{safetyen}{10}{5}
... Safety First! ...
\end{safetyen}
```

The text will be marked by a different color and a bar will be placed on the right margin, all in order to attract attention to the safety issues. The first argument (10) indicates the length (in mm) of the bar, while the second one (5), indicates the vertical offset of the top edge of the bar. One may need to adjust these values after looking at the made document. The bar is not transferred to the next page, therefore one should not make it too long. The example from above will look as:

... Safety First! ...

3.5 Hyper References

PDF allows to have hyper references both internal to the document (citations, sections, figures etc.) and external ones (WWW). In the latter case one can configure `acroread` or `xpdf` to use a WWW browser⁴. The \LaTeX references `\ref{...}` to sections, figures etc. automatically become hyper references in PDF and HTML. For the external references one can use:

```
\url{http://www.jlab.org/~moller/}
\href{http://www.jlab.org/~moller/}{M{\o}ller page}
```

In the former case the whole URL will appear on the output, in the latter only the second argument will appear, but clicking the mouse button on both will produce the same results. No escape sequences for the special characters are needed.

⁴ Use the `Edit/Preference` button on `acroread`. For `xpdf` (version 1.00-5) you may need to copy `/etc/xpdfrc` to `~/xpdfrc` and edit it, uncommenting the line `#urlCommand netscape -remote 'openURL(%s)'` and commenting out the previous line. Typically, `xpdf/acroread` tries to use an existing WWW browser window and does not open a new window.

3.6 Names of Authorized Personnel

Since the OSP document contains many lists with the names and coordinates of the authorized personnel, a special environment has been defined in order to minimize typing and make these lists look standardized.

The names are stored in a file `src/people/names.txt` in text format as:

```
Areti           Hari           JLab
Chen            Jian-Ping      JLab
Spraggins      Darrell       JLab
Saha           Arun          JLab
Veyssi\{e}re   Christian     CEA   9704   cveyssiere@Cea.Fr
```

The first 3 fields are obligatory, while the 4-th and 5-th field are optional. The latter indicate the “outside” phone number in the home institution (last 4 digits) and the e-mail to be used, different from the JLab e-mail. The name fields allow special L^AT_EX characters as shown in the last line. In case an “outside” telephone number is given, one has to provide an appropriate entry in the `src/bibl/jlab_manuals.bib`, as:

```
@manual{inst:CEA,
ORGANIZATION = "{CEA Saclay, F-91191 Gif-sur-Yvette, France}",
NOTE = "{Telephone number, from US: 9-011-33-1-6908-XXXX}",
URL = "http://www-dapnia.cea.fr/Sphn/"
}
```

The “outside” telephone number printed in the document will contain a reference to the institution entry. While making the document, the file `src/people/names.txt` is automatically processed and a file `src/people/names.tex` is created and included. This file contains a separate command for every name in the list, which should be used in the text for referencing to this name. The JLab coordinates of each person are automatically obtained using the command `staff`. Therefore, the names’ spelling should match the “staff” database.

A table of the authorized personnel may look like:

```
\begin{namestab}{tab:beam:personnel}{Example: Beam line: authorized personnel}{%
  Example: Beam Line: authorized personnel}
\namestabheader{Hall A Physicists}
\ArunSaha{\em 1-st Contact}
\JianPingChen{\em 2-nd Contact}
\namestabheader{Liaisons from Accelerator Division}
\HariAreti{.to Physics Div.}
\DarrellSpraggins{.to Hall-A}
\namestabheader{Remote Experts}
\ChristianVeyssiere{Electronics}
```



```
\end{namestab}
```

The command `begin{namestab}` has 3 variables:

1. the label for the table;
2. the caption for the table list;
3. the caption.

A name is referred to by a command consisting of the first and last names. A parameter may contain some additional information. The command `begin{namestab}` inserts a horizontal line with the comment given, into the table. The example above is printed in Table 1.

Name (first,last)	Dept.	Call [4]		e-mail	Comment
		Tel	Pager		
<i>Hall A Physicists</i>					
Arun Saha	JLab	7605	7605	saha@jlab.org	<i>1-st Contact</i>
Jian-Ping Chen	JLab	7413	7413	jpchen@jlab.org	<i>2-nd Contact</i>
<i>Liaisons from Accelerator Division</i>					
Hari Areti	JLab	7187	7187	areti@jlab.org	..to Physics Div.
Darrell Spraggins	JLab	6070	6070	spraggin@jlab.org	..to Hall-A
<i>Remote Experts</i>					
Christian Veyssière	CEA	9704 [5]		cveyssiere@cea.fr	Electronics

Table 1: Example: Beam Line: authorized personnel

Use the existing OSP document as the source of other examples.

3.7 Other Commands and Environments

I suggest to use a special style for the computer commands or names:

```
\mycomp{ .... }
```

At the moment it uses the `\sf` font and the magenta color.

For the e-mail references use a command as `\email{gen@jlab.org}` which would produce gen@jlab.org.

In order to comment out a big piece of the text, instead of commenting out each line one can use a command:

```
\obsolete{ .... }
```

3.8 New L^AT_EX files

Creating a new L^AT_EX file in an existing directory, one has to add its name to the appropriate `all.tex` and add the contents of the file `cvs.template` to the end of the new file. See also the CVS instructions 3.9.

3.9 Changing the Repository

After completing and debugging your changes, you may commit them to the CVS repository by:

```
cvs add file - add a new file if needed;  
cvs commit -m "some comments" file - commit the updated file.
```

4 Conclusion

One can use the file `src/beamline/moller.tex` as an example for the used L^AT_EX commands and extensions.

I have checked the procedure only on the Linux platforms.

In case you can not use L^AT_EX, please do not send me documents in proprietary MS formats, like Word, but rather send just a simple text file and pictures, which I can convert to L^AT_EX and incorporate.

References

- [1] Hall A WWW page. <http://hallaweb.jlab.org/>. 2
- [2] OSP development page. <http://www.jlab.org/~gen/osp/>. 2
- [3] CVS (Concurrent Versions System) WWW page. <http://www.cvshome.org/>. 2
- [4] Jefferson Lab, (12000 Jefferson avenue, Newport News, VA 23606). URL <http://www.jlab.org>. Telephone numbers: (757)-269-XXXX, Pager numbers: (757)-584-XXXX. 9
- [5] CEA Saclay, F-91191 Gif-sur-Yvette, France. URL <http://www-dapnia.cea.fr/Sphn/>. Telephone number, from US: 9-011-33-1-6908-XXXX. 9