Tips on how to write a technical report

To write a technical report

A technical report can be divided into the following parts:

Introductory part:

1. Title page
2. Summary
3. Preface
4. Table of Contents

Report part:

5. Introduction
6. Main body (analysis, execution or evaluation)
7. Results, conclusion and recommendation

Final part:

8. Reference list
9. Appendices (appendix)

FRONT PAGE

The title page should be informative because it is the first thing the reader encounters. The title should be relevant to the content of the report.

If you use an image on the title page, it should also be relevant in terms of reporting content. The title page should contain:

- The title of the report
- Author
- Publishing company or institution
- Place of issue
- Release date
- Possible report number
- Possible client or client

SUMMARY

This should give a brief account of the content of the report so that a reader can quickly form an idea of whether it is of interest to read on. You can choose between two types of summaries: the *descriptive* or *informative* . The descriptive summary the set contains only facts about what the report the gate handles, i.e. the main points of the report. The informative summary is a kind of mini-report that gives facts about it the underlying work and also presents results briefly. The summary shall be short, but it must be written in full constant sentences and be designed so that it can be read separately. It must not contain facts or information not included in the report itself. The summary is written when the report is otherwise complete.

PREFACE

The foreword can provide facts about the report's advent presented. For example, the author can thank people who in some way helped in the creation of the report. The technical content of the report must not be mixed into the foreword. All Reports do not need to have a preface and usually this is omitted in technical reports.

TABLE OF CONTENT

The table of contents should give the reader an overview of the contents of the report and make it easier for the reader to find in the report. Reference to the table of contents shall not be included in the table of contents

REPORT INTRODUCTION SECTION

Here you should give the reader a good start in order to stand what the report is dealing with. You're going to briefly describe

- The problem(s) you want to solve
- The purpose and scope of the report
- Background (theoretical or historical)
- The structure and structure of the report

The introduction can easily be too long so try to stick to the above four points.

BODY

This is the core of the report and is the longest section. It consists of a description of your work and how you obtained your results. The layout may vary depending on the topic and purpose.

For example, it may consist of

- Theory background
- Experiments (measurements, simulations)
- Results
- Discussion (comparison between theory and experiment)

Use figures such as charts, simulation results and measurement results in the running text.

The text should link to the figures. Avoid to make references to appendices in the appendix for characters needed to understand the text. It destroys the rhythm of reading needed scroll to appendix to understand what is described in the text. Figures should be numbered and be provided with figurative texts. The figure text should be written under the figure and with different fonts or style compared to the running text.

TERMINATION

The ending should be seen as a natural complement to the main body. It can contain one or more of the following:

- Conclusions
- Limitations and benefits
- Summary
- Applications
- Recommendations for continued work

REFERENCES

Literature references has to be placed at the end of the document. It shall contain the following information:

- The name of the author
- Year of printing
- Full title
- Place of issue (not printing place)
- Publishing company or institution
- Edition (if there are several)
- ISBN number

More information on how to write references can be found, for example, through the library's website

ATTACHEMENTS

Comprehensive tables with measurement values, comprehensive calculations, program code or other background material can be presented in appendices. The appendix should not contain schedules, measurement results or simulation results that naturally belong in the body of the report. With today's computer tools, it is not a big problem to be able to insert figures continuously in the text.

CHECKLIST FOR THE REPORT

- ☐ Is the title representative of the content?
- ☐ Is the title page complete?
- ☐ Is it clear that the report has a logical structure when you review the table of contents?
- ☐ Are the headlines consistent for the content?
- ☐ Are the headings correct with the table of contents?
- ☐ Is the summary true to the content of the report?
- ☐ Does the introduction provide enough background information to allow the reader to access the content?
- ☐ Is the description of methods, equipment and experiments sufficiently detailed?
- ☐ Do you distinguish between facts and your own opinions?
- ☐ Is the difference clear in the text?
- ☐ Are the results clear and clear?
- ☐ Are characters integrated with the running text?
- ☐ Are figures numbered?
- ☐ Is it good flow in the running text?
- ☐ Do you report all sources?
- ☐ Is the reference list correct?
- ☐ Is there anything that is missing from the petition?
- ☐ Can something be deleted?
- ☐ Is the text divided into paragraphs in a logical way?
- ☐ Does the report contain all the necessary sections?
- ☐ Is the report proofread for spelling errors (have you checked spelling) and grammatical errors?

THE LANGUAGE

The language of a technical report must be adapted to the target group that will read the report. In our case, you can imagine that the reader is a person with technical knowledge corresponding to your own. The language should be straight, simple and easy to read. Do not try to make it unnecessary. Read through what you have written and "listen" if it sounds good or feels wrong in any way. Grammar and spelling errors can destroy a text and draw attention from the message in the text. Most of the spelling and typing errors can be detected with spell checkers. In your first draft, it is better if you focus on getting a good flow in the text than writing perfect English. Grammar and spelling errors can be corrected after the report is completed.

Engineers are not usually known to be good language practitioners so it may be appropriate to provide some general advice to avoid the most common pitfalls.

WRITE SIMPLY AND CLEAR

Use as simple and clear language as possible. Vary the sentence length. Sentences which gets too long should be break up in shorter parts where a main idea is expressed in every new sentence. Write rather in active form than in passive form. Passive forms are recognized by that they have a ‘s’ at the end:

The voltage is amplified by operational amplifier connections. (Passive form)

Operational amplifier connections amplify the voltage. (Active form)

The disadvantage of passive form is that you can omit the part that acts. So it becomes only:

The voltage is amplified.

You don't really know what makes that exciting strengthening.

WRITE BRIEFLY

Avoid vague, ambiguous, inaccurate, meaningless words and expressions. Do not vary subject terms if they stand for the same things or phenomena.

WRITE COMPLETELY

Write completely, logically and coherently Spirit. Avoid getting too detailed about what is not needed. Insignificant information leads easily the reader on get bored or miss leaded about the topic presented.

WRITE WITH RIGHT WEIGHT

The secret to quickly understanding a sentence is to find the predicate (verb in the main sentence) as soon as possible. It is usually said that such a sentence is right-heavy because most words are to the right of the predicate. A right-wing sentence is usually easy to read:

Pre-amplifier resistance must be increased if

if the microphone's output resistance is so high

like 3 k Ω *.*

The left-hand variant is more difficult to read:

Because the microphone's output resistance is so high like 3 k Ω *must the preamplifier's resistance increased .*

HEADLINES TECHNOLOGY

Leaflet technology means that you emphasize the most important thing first so that the reader's attention is captured immediately. Then you tell the next most important thing, and so on, to include more detailed information at the end that may be perceived as less important by most readers.

NOUN DISEASE (Substantivsjukan)

Beware of the substance sickness that often thrives in bureaucratic language. Substantive illness means that in time and in the past, you convert verbs into nouns to make it sound more remarkable. Namely, it is possible to substantiate verbs by adding one of the suffixes - ing, - else or - ending.

TECHNICAL TERM

In technical reports, there are many technical terms.

Of course, which keywords you use will depend a lot on the target audience that reads the report. Facts that may be considered familiar to the reader may not need to be explained. However, a good method is to explain the word (preferably in parentheses) the first time it is used in the text. Do not abuse the technical words that would make the text difficult. English expressions are becoming more and more common in technical contexts and it is easily any form of English.

ABBREVIATIONS

There are many abbreviations in the technical language. The abbreviations you can use also depend on the target audience reading the report. Well-known abbreviations can be used but should preferably be explained the first time they are used.

Example: OP (Operational Amplifier)

General abbreviations should be printed in running text: Type "with respect to" instead of map.

Search flow in the text

Make sure the text flows. You may not get the flow in the text of the first version and discover when you read through the text that something is missing or that the text flow is limiting. One reason may be that the outline is not the right one. Perhaps you must rewrite the order between the sections or between the different paragraphs in a section. One another reason may be that the sentences stand as "isolated islands" without contact with others text. You may have repetitive words or repetitive sentences structure, or perhaps even often sentences that begin with the same words. Experiment yourself for a better flow by rewriting over and over the same portion of text until you obtain a good text flow. Exercise and improve yourself and your writing aiming to obtain a better flow by rewriting your texts and speeches.

LAYOUT

- Give different texts a different typography, which distinguishes it from the running text. Also, make sure that all the characters have an explanation text.
- Always put page numbers.
- Use hyphenation if the text exceed the margins, i.e., has a straight right margin, otherwise you will get large windows in the text. Ideally, you should only have the text left aligned.
- Adjust the line spacing to the column width. A wider gap needs more space between the rows.
- Adjust the font size to the column width. Wide columns need larger fonts than text with narrower columns.
- Do not mix too many fonts. One or two fonts are often enough (one for headings and one for body and content).
- Make sure that headings are closer to the corresponding text than the previous text.
- Use italics and bold to emphasize something in the text. Do not use underscores or capital letters to highlight words.

REFERENCES

Walla (1990),"*How to write better technical reports"*,Student Literature, Lund ISBN 91-44-29271-6

Merkel (1996) *Technical reports and ex-mens work* Linköping University

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