AdvancedReportV2

Temperature Uniformity Survey

YOKOGAWA Deutschland GmbH
Broichhofstraße 7-11
40880 Ratingen / Germany
Tel. +49 - 2102 - 4983 – 0

Contents:

1. Introduction

The leading players from the aviation industry have set up a program for common working and management practice, under the name "Nadcap" (National Aerospace & Defense Contractors Accreditation). A part of the program is dedicated to the registration and documentation of component testing.

The program "TUSReport" [TUS = Temperature Uniformity Survey] for Microsoft Excel outputs the collected data from the test protocol and generates a report as documentation of the conducted test.

A requirement for these functions is the existence of the displays data files and/or the Event display files in a file on the windows PC. Through the FTP-client, a function of the Yokogawa recorders it is possible to store the files on the PC. An FTP-server program is required on the windows computer. This is a standard component in the Windows XP and all newer Windows operating systems as a special feature which requires activation. In other operating systems, the use of freeware or shareware FTP server is recommended. You can find further information in the user manual of the recorder or on our webpage.

For updates and changes about the program, please read the info file stored in the installation folder or contact your Yokogawa sales team.

Note:
Please read this manual to find solutions!

2. Revision

Date	Version	Detail
05.2013	1	First creation TUSReport Version 2
09.2013	2	Update Recorder List and some chapter.
11.2013	3	Update Recorder List and some chapter.
01.2014	4	Update some chapter
04.2015	5	Updated some chapter

3. System Requirements

3.1 Hardware

For the documentation of the test, a paperless Data recorder is required. The Data recorders listed below are supported by the Add in:

Recorder	File extension	Data type
GX20 / GP20 www.smartdaq.com	.GDS .GEV	Display Data Event Data
DX100 / DX200	.DDS .DEV	Display Data Event Data
DX1000 / DX1000N / DX2000 [DXAdvanced] www.DAQStation.com	.DAD .DAE	Display Data Event Data
DX1000 / DX1000N / DX2000 R4 [DXAdvanced R4]	.DSD .DSE	Display Data Event Data
FX100	.DDS .DEV	Display Data Event Data
DX100P / DX200P Pharma-Model	.DBD .DBE	Display Data Event Data
MW100 / MX100	.MXD	Data

For the analysis using a PC, the following minimum hardware requirements must be met.
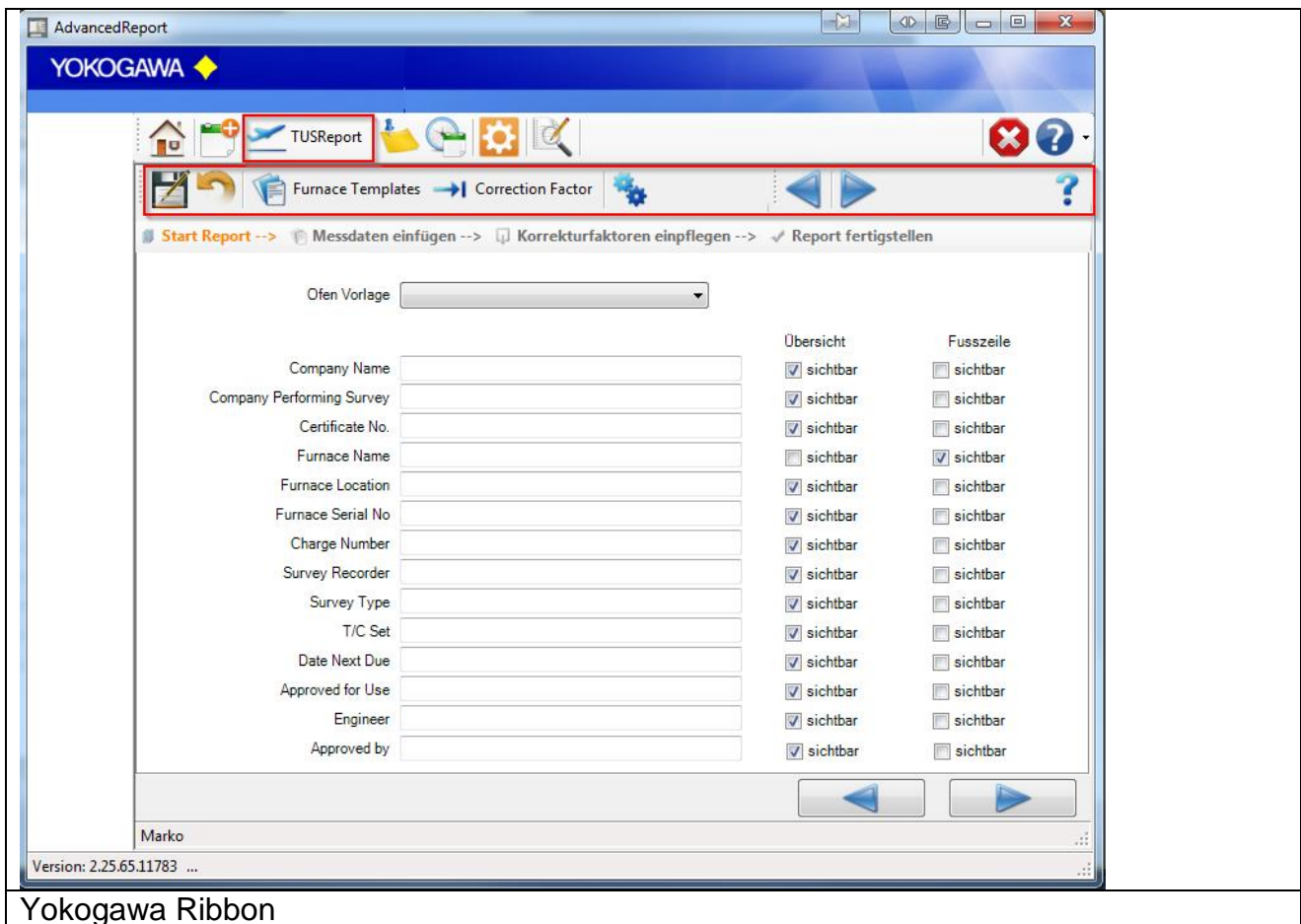
• Hard disk capacity: 13 MB
• Memory: 1GB

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4.   **Starting the program**

The program shows the header „TUS-Report" in the Menu bar of Microsoft Excel.

The program is controlled via the add-in menu:
- Uniformity survey report

- Furnace Template

- T/C Correction Factor

- Settings

- Info Manual

Yokogawa Ribbon

The individual menu items are explained in the following chapters.

Tip:
After successful installation, please check your settings (Menu item „Settings").

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5. **Settings**

Items under the menu choice "Settings" must be processed before the report creation.

Using the „Save", „Cancel" and „Transfer" buttons, the settings are confirmed/rejected and are then made available in the report.

5.1 Data File informations

Tab „Report details"
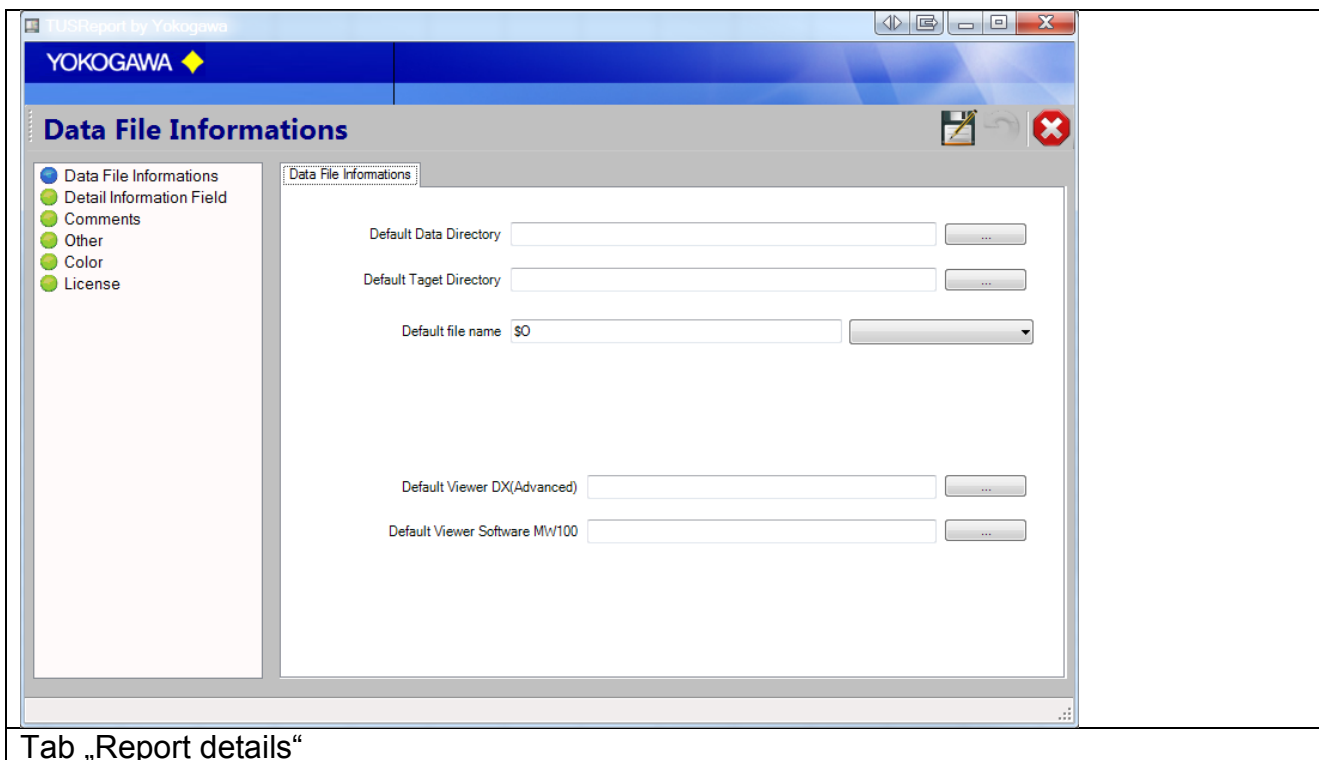
5.1.1 Template, Directory

In order to customize reports to your specific needs reports can have special header sheets applied.
Under „default template" a Excel sheet can be defined as the default template. At the report generation the template can still be changed for another.

The standard template defines the folder location to look for the data file and where to send the completed report.
These settings will also be requested / confirmed during the composition of the report.

With „Report filename" the name of the finished report is defined.
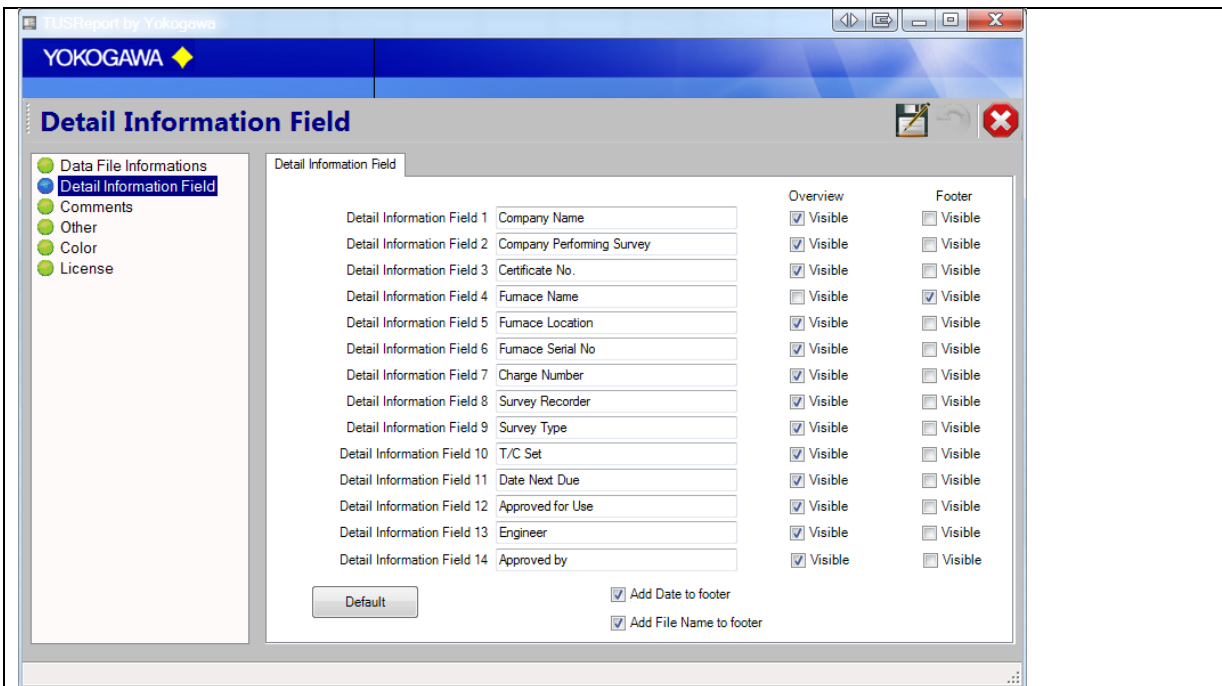
Use the following sign for a predefined name:

$T01 bis $T14	Entry of the 14 user definable text fields
$HH	Hour of the first file
$mm	Minute of the first file
$SS	Second of the first file
$DD	Day of the first file
$MM	Month of the first file
$YY / $YYYY	Year of the first file (08 or 2008)
$O	Original file name of the first file

In the expanded display, the stabilization point is shown for each file in the report.

Insert the path to the Software DAQStandard Viewer into the „Viewer"-Text field.

5.2 Textfields (Fields)

MenuTab „Field settings"

5.2.1 Free defined Labels

There are 14 user definable text fields available for selection. These can be displayed in the test overview or footer of the report. The position of these fields in the report can be set using the checkboxes.
If the checkboxes unchecked or the text field is empty, in the main form the text field is invisible.

5.2.2 Put file name and date into footer

Please check these fields to put the information into the footer of each page.
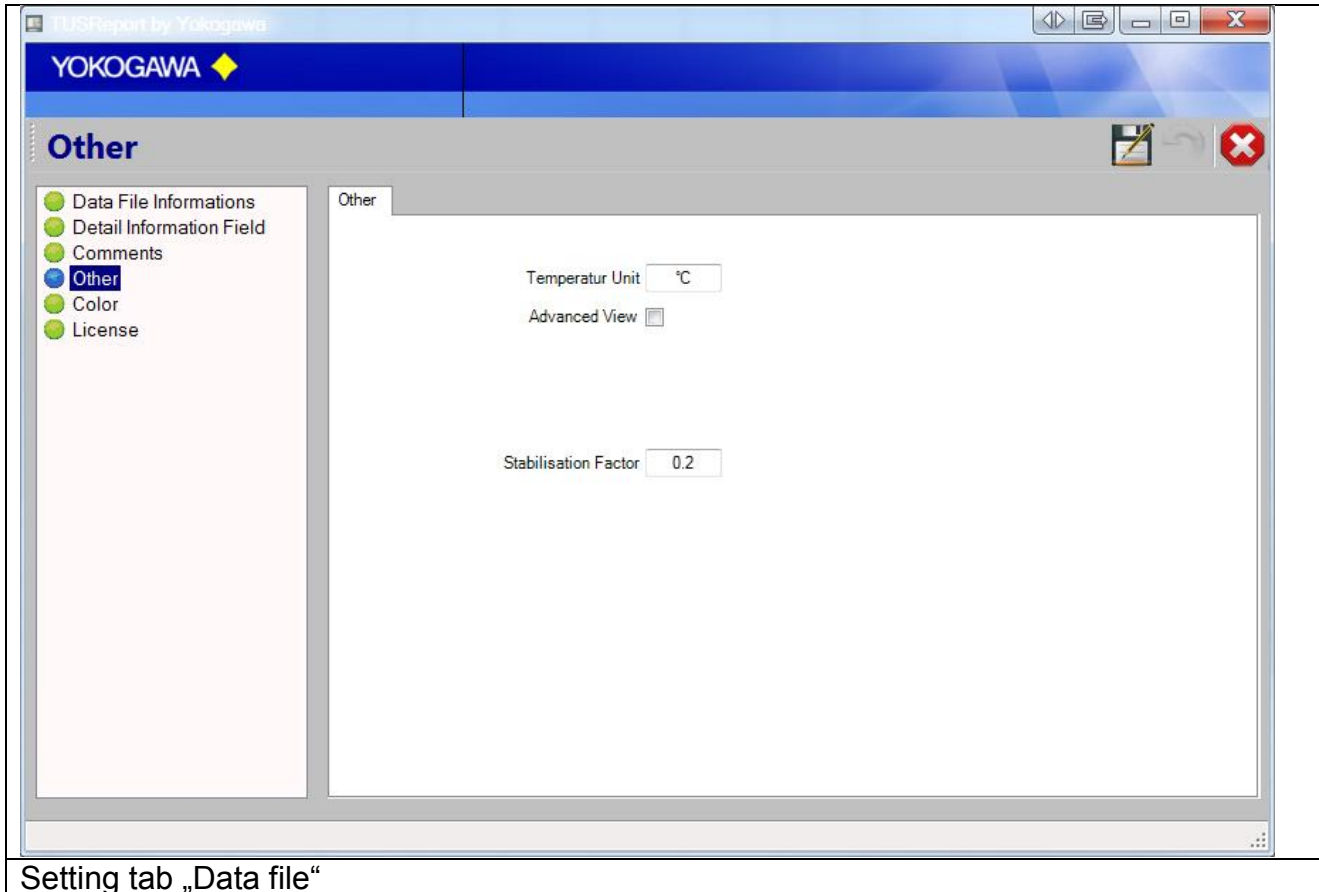
5.1 Comments
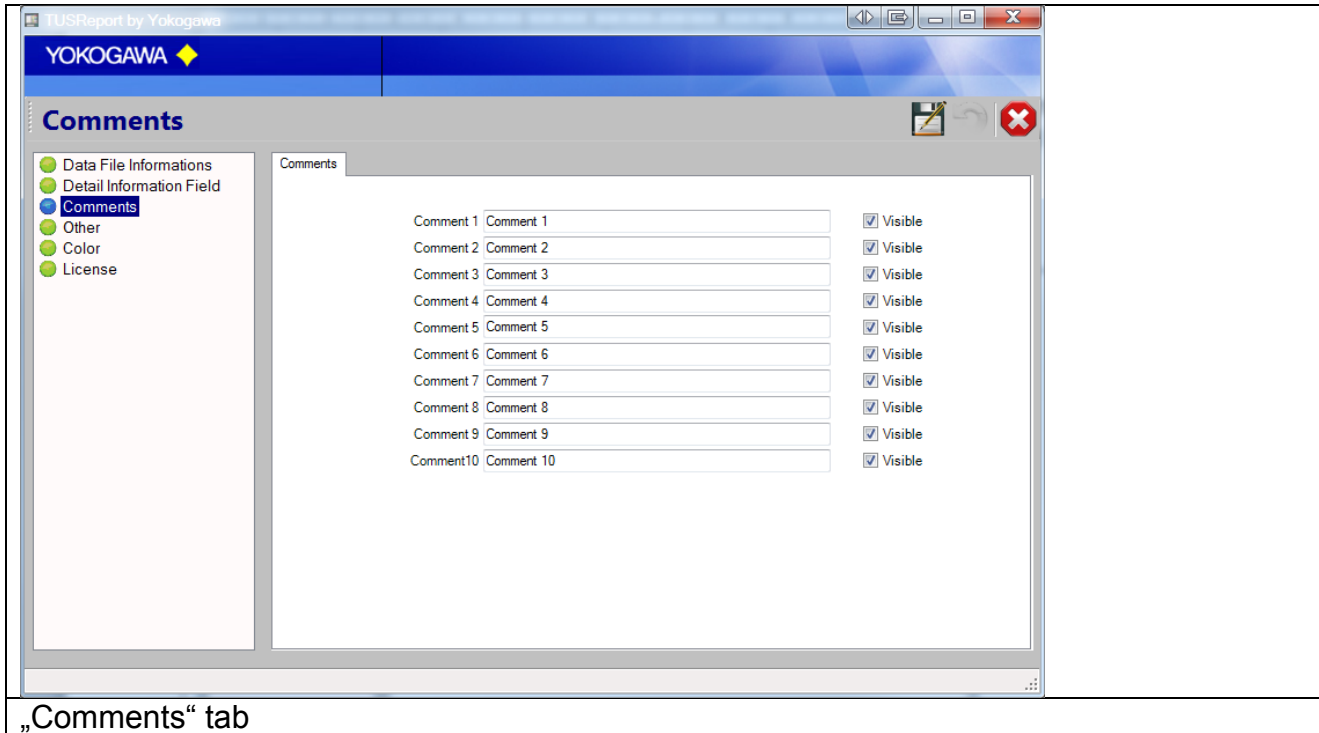
„Comments" tab

5.1.1 User definable comments

For better definition of comment fields in the main body, extended comments can be entered here.
If the text field is empty, in the main form the comment field is invisible.

5.2   Other

Setting tab „Data file"

If a DXAdvanced is chosen, there is the additional possibility to enter channel calibration correction data into the test (CC1 option).

5.2.1 Temperature unit

If another temperature unit is required, this can be entered here [DegC; °F].

5.2.2 Stabilisation Factor

With the stabilisation factor the maximum divergence of the measuring value is defined over a period of 6 minutes.

5.3 Chart

„Chart" tab
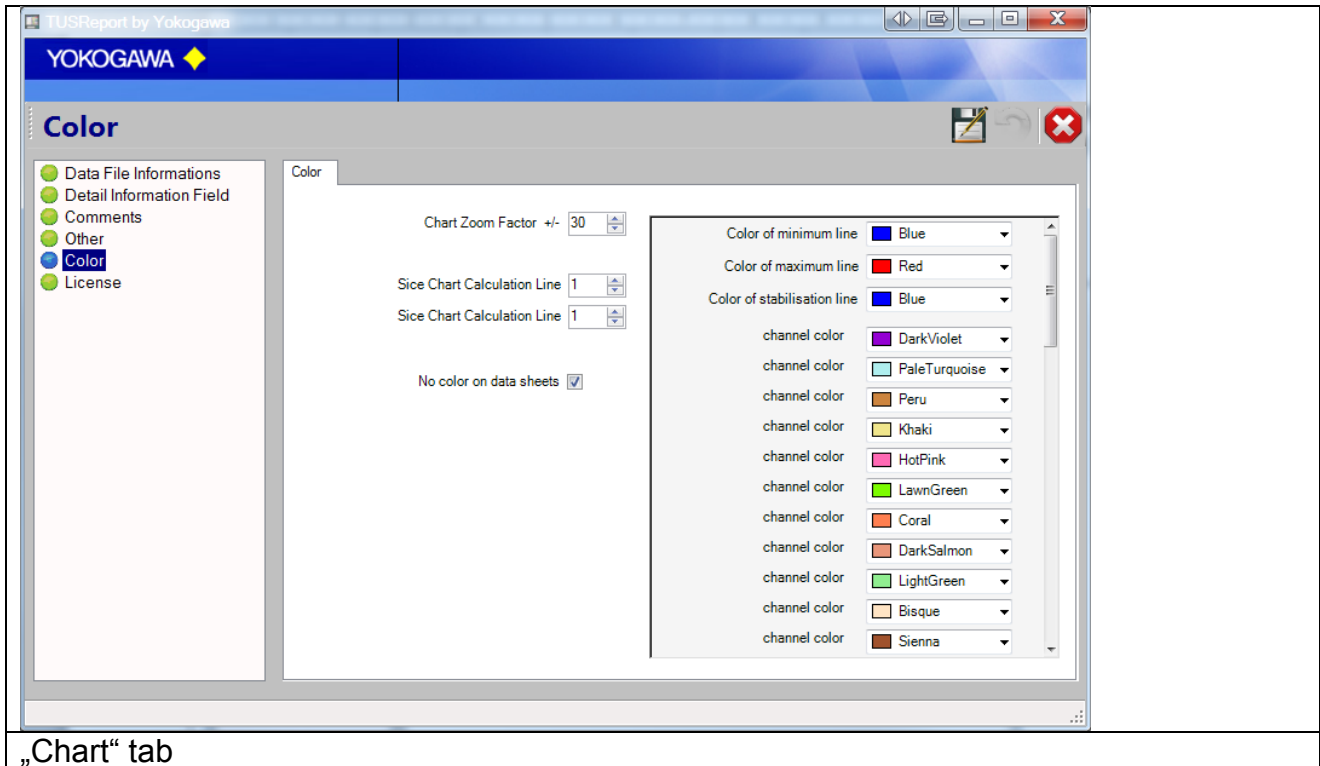
5.3.1 Color settings

With this tab it is possible to change the line colors for the charts. The Min/Max values colors are settings with the Color Table value.

5.3.2 Line strength

The line strength of the individual trend lines can be between 4 strengths can be selected.

5.3.3 Zoom range

The zoom factor defines the range over and under the test temperature. The value Null set the factor to default.

5.4.1 Overview page

The results of each test will be shown on one sheet as default. By changing this option it will be create a separate overview page for the each test.

5.4.2 Show extended data sheet / Advanced View

By activation of these functions, the software put more information into the report sheets.

5.4.3 Tag/Name

If the appropriate channels have been given tag names, these will be shown in the report. If no tag names are defined, the channel number will be shown instead.

5.4.4 Manual stabilisations selection

With the stabilization selection, it is possible to the stabilization time manual. The calculated stabilization time will be set as default value.

6.   **Furnace templates**

With the furnace template it is possible to create a template for a lot of furnace with different settings.

Use the button Add, Change, delete and Save to modify the entry values for the different furnaces.
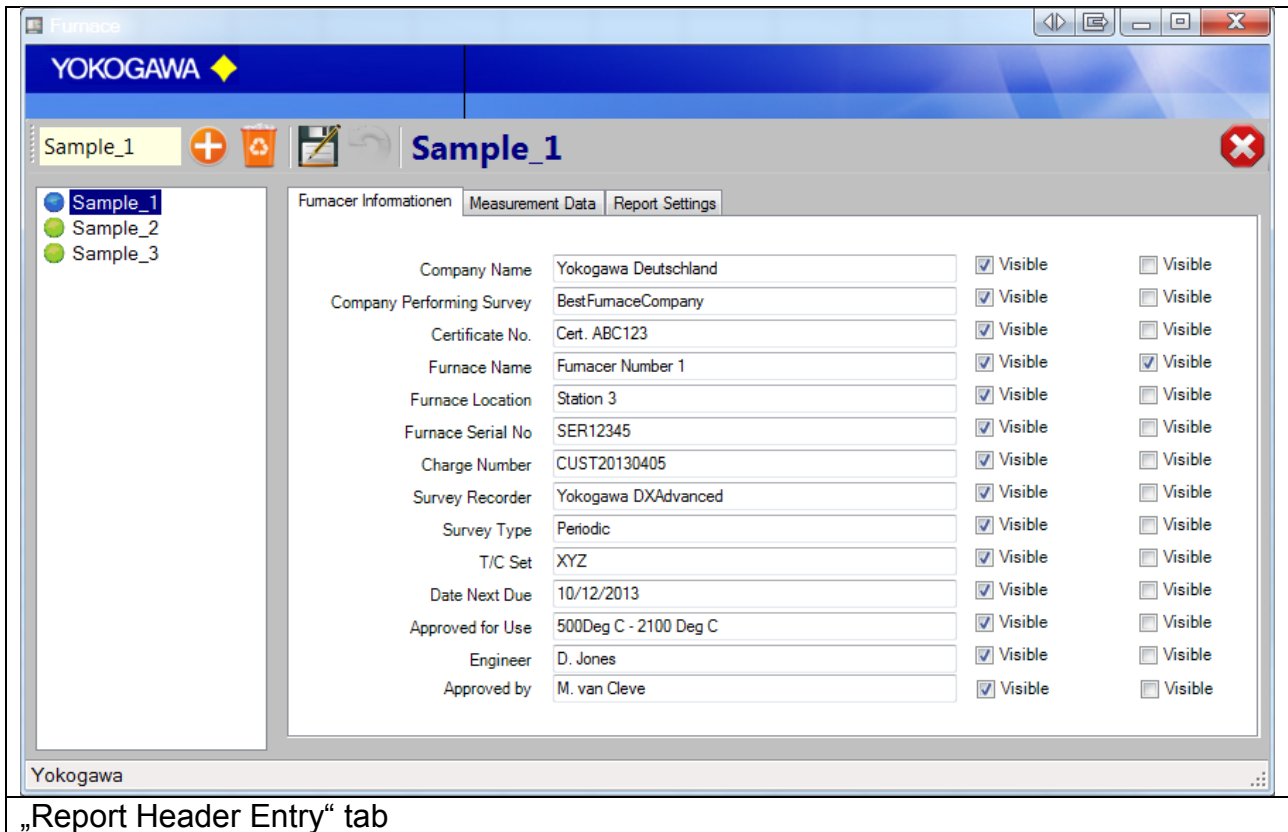
„Report Header Entry" tab

There are 14 user definable text fields available for selection. These can be displayed in the test overview or footer of the report. To setup more than one Furnace Template use this tab.

Check chapter [5.2 Textfields (Fields)] for setting different text items for the report header.
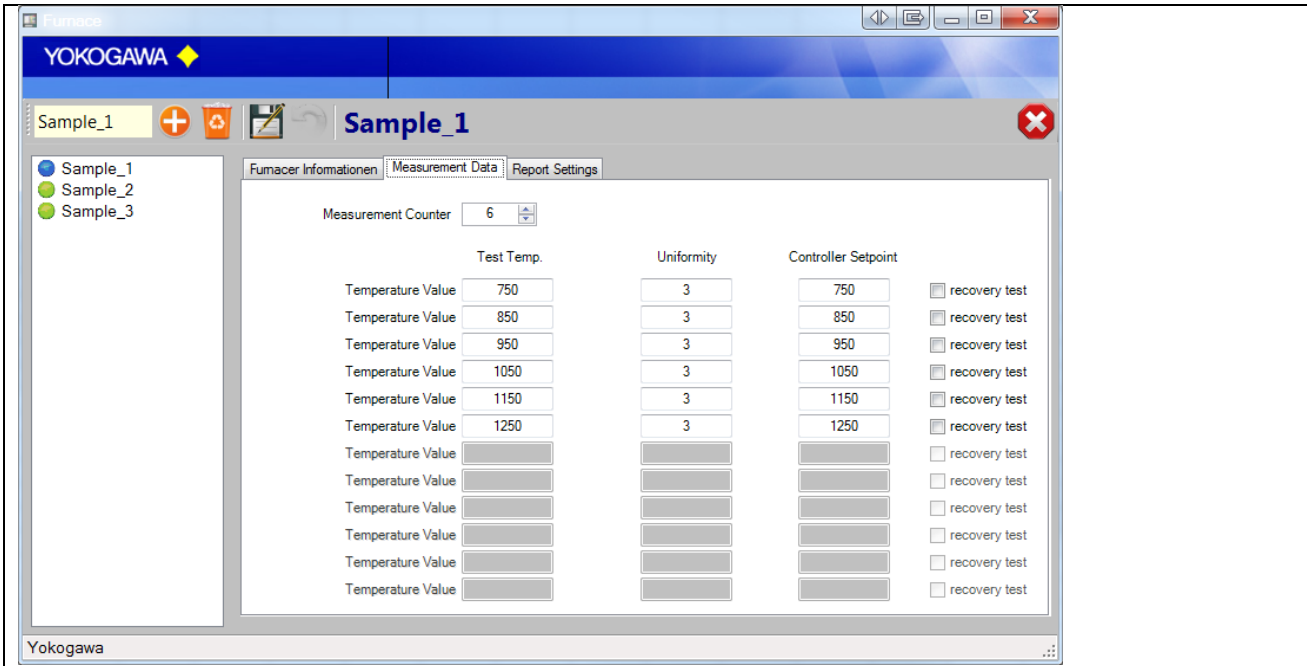
Data file

To set the different temperature settings and tests, use this tab.
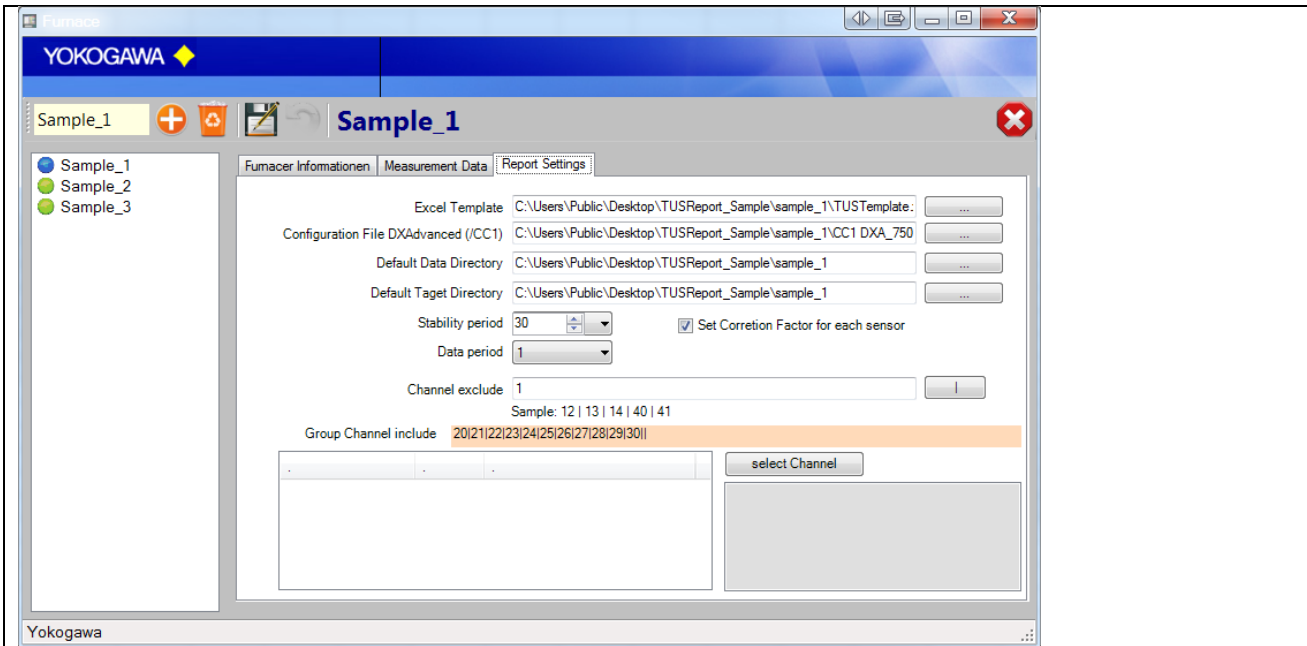
Report layout

On this tab it is possible to setup a different default template for each test/furnace. Also the stabilization test period is setup on this tab.
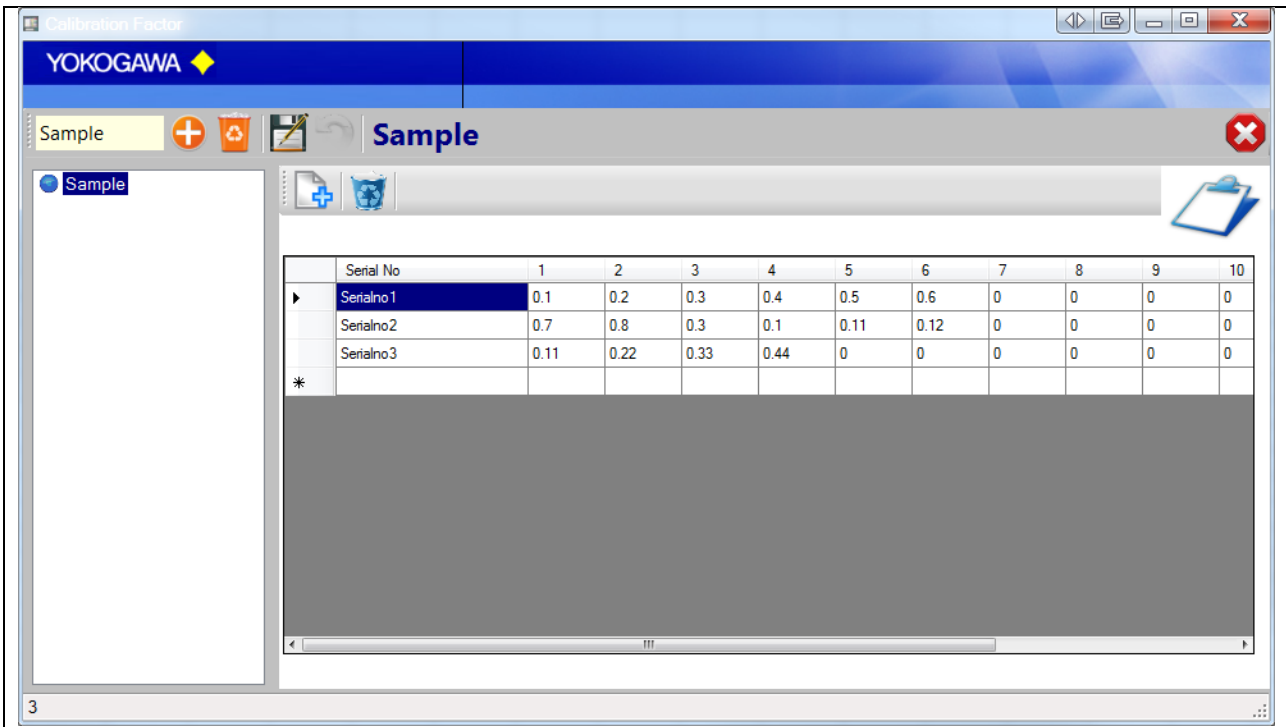
To exclude some channels, add the channels into the text box. The selected channels are not shown in the report.
Separate each channel with a pipe sign (|).

7. Correction Factor templates

With the correction factor template it is possible to create a template for a lot of different thermo couples.

Use the button Save and Cancel to modify the entry values for the different thermo couples.

	Serial No	1	2	3	4	5	6	7	8	9	10
▶	Serialno1	0.1	0.2	0.3	0.4	0.5	0.6	0	0	0	0
	Serialno2	0.7	0.8	0.3	0.1	0.11	0.12	0	0	0	0
	Serialno3	0.11	0.22	0.33	0.44	0	0	0	0	0	0
✳											

Correction factor table

With this table it is possible to define 20 different < Thermo couple with Serial number an 12 temperature entry.

On Tab 2 of the creating report Form it is possible to select different Thermo couple. It is also possible to write manual settings into the fields.

Selection Combo box

8. **Create Report/Test Protocol**

Under the menu item „Uniformity Survey Report", the test protocol is created.

The report assistant takes you through each point of the test protocol. There are three screens shown in total.
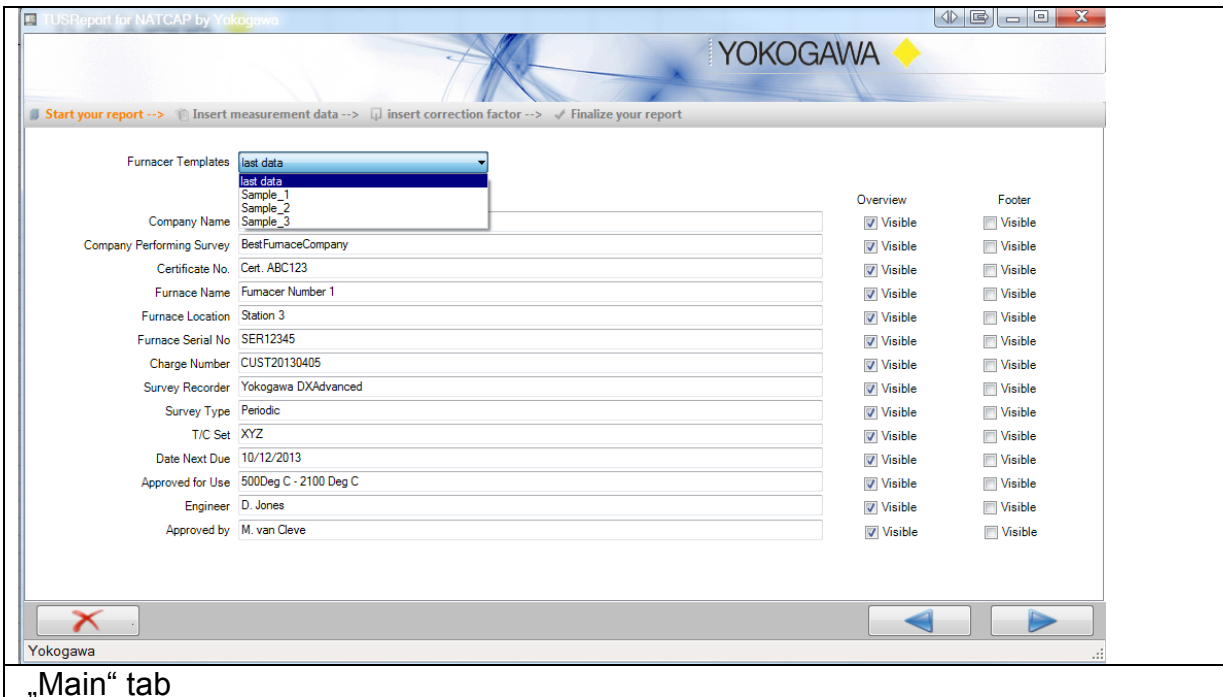
The individual settings are requested and checked for completeness.

8.1   Main

The highlighted window consists of two entry fields. The first part defines the free text fields. How to modify free text fields can be found in "Options" [5.2]. Use the combo box to change the entry.

The second part defines the measurement data's common settings.

Each threshold has its own temperature, the maximum permissible deviation and the set point of the furnace temperature controller.
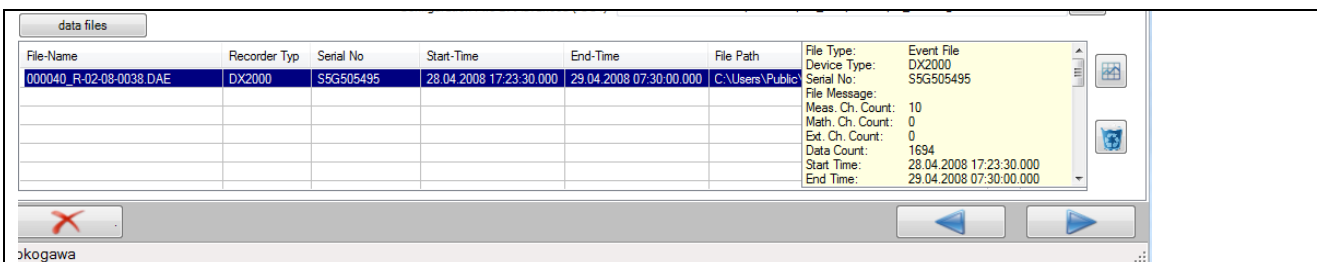

„Main" tab

Up to 12 test points can be entered.
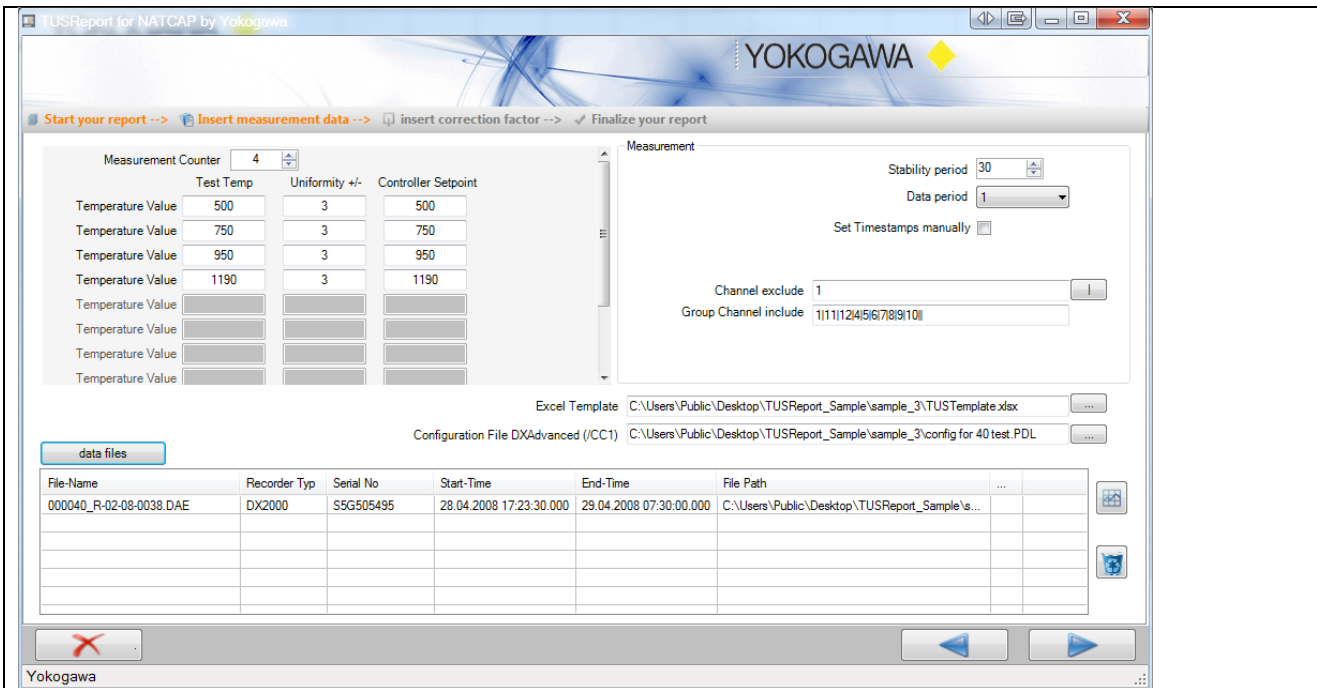
"Main" tab

Add files

Using the [data files] button selects the data. The *"Open data"* window shows, when a point is selected, a small sample of the general data information.
If an incorrect value is recognized, this field will be shown in red.

> **Tip:**
> Use the Drag and Drop function for an easy file selection.

If the DXAdvanced recorder selected, it is possible to add the configuration file with the CC1 option data. There is a separate page printed in the report for these details.

If it is necessary to enter additional correction factors, the checkbox "Correction factor" needs to be activated. With this function, the correction factor for each channel should be entered on the next page.
Activating the Checkbox „One correction factor per T/C set" reduces the number of correction factors per channel to one only.

The stability time defines the minimum duration of the stability in the respective temperature-profile.

Tip:
Most of these entries will be saved and with new tests it will not be necessary to re-enter all details.

During the test interval, data reduction takes place to simplify the report. Only the data in this interval are portrayed in the report. In addition all further relevant data outside of this interval are considered in the report and are portrayed in the overview.

Channel exclude	1	|
Group Channel include	1|11|12|4|5|6|7|8|9|10|	

Select different exclude Channel

8.2 Thermocouple Correction factor

If all values are correctly entered, use the „Next" button to continue.

In this window a serial number must be entered for each thermocouple. A separate text box is shown for each channel.

If the checkbox "Correction factor" is activated, a textbox for each sensor at each measurement point is shown. The correction factors must be entered for each measurement point.

Sensor correction factors

8.3   Enter comments

The final window of the „report assistant" defines the comment fields. Definition of „free comment" fields can be found in "Settings" in section [5.4]

There are six fields which can be added. The first three are single sentence fields. In the remaining three, larger comments or notes can be added.

The comments are shown in the respective templates.

„Comments" tab

Set time manually
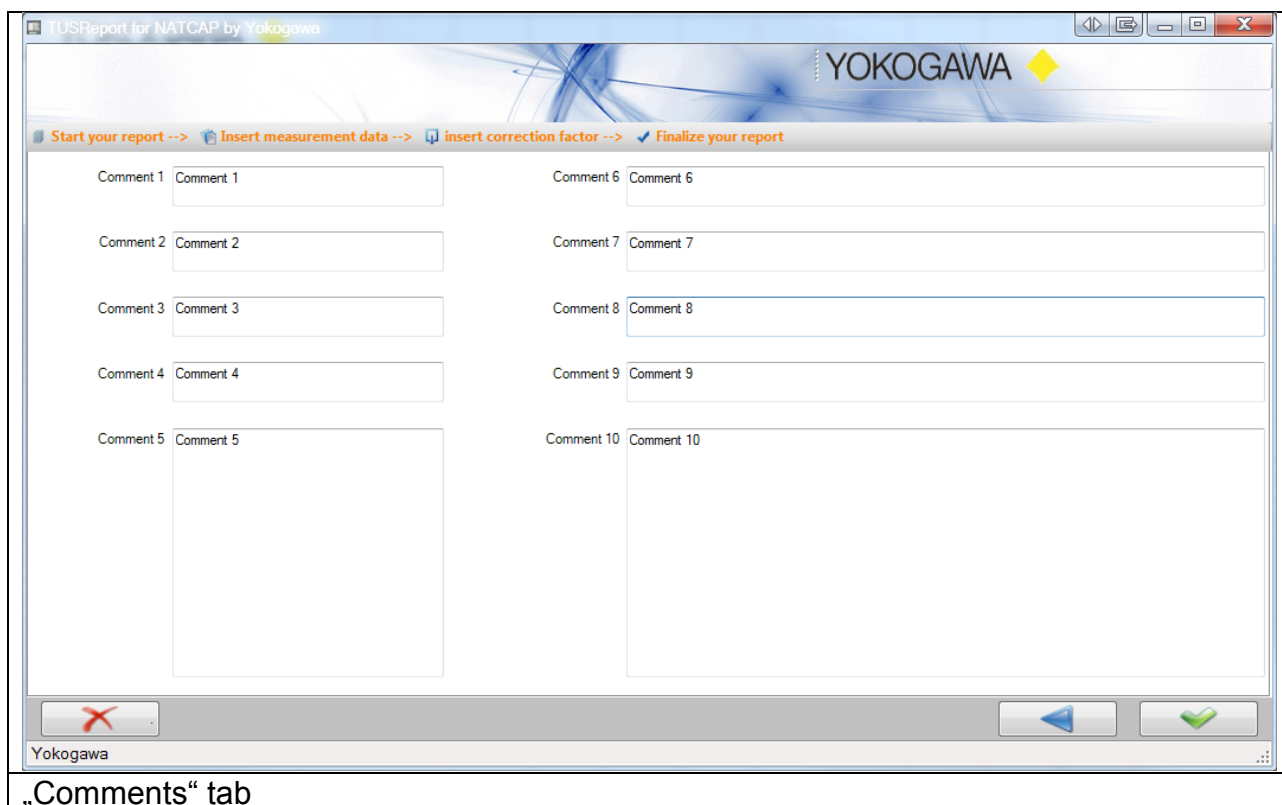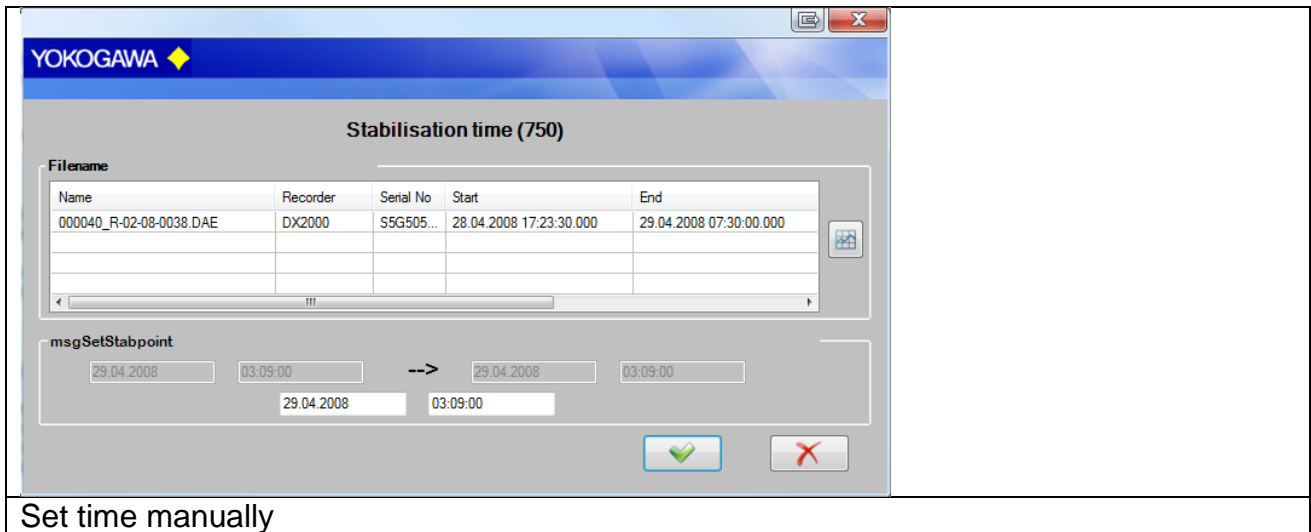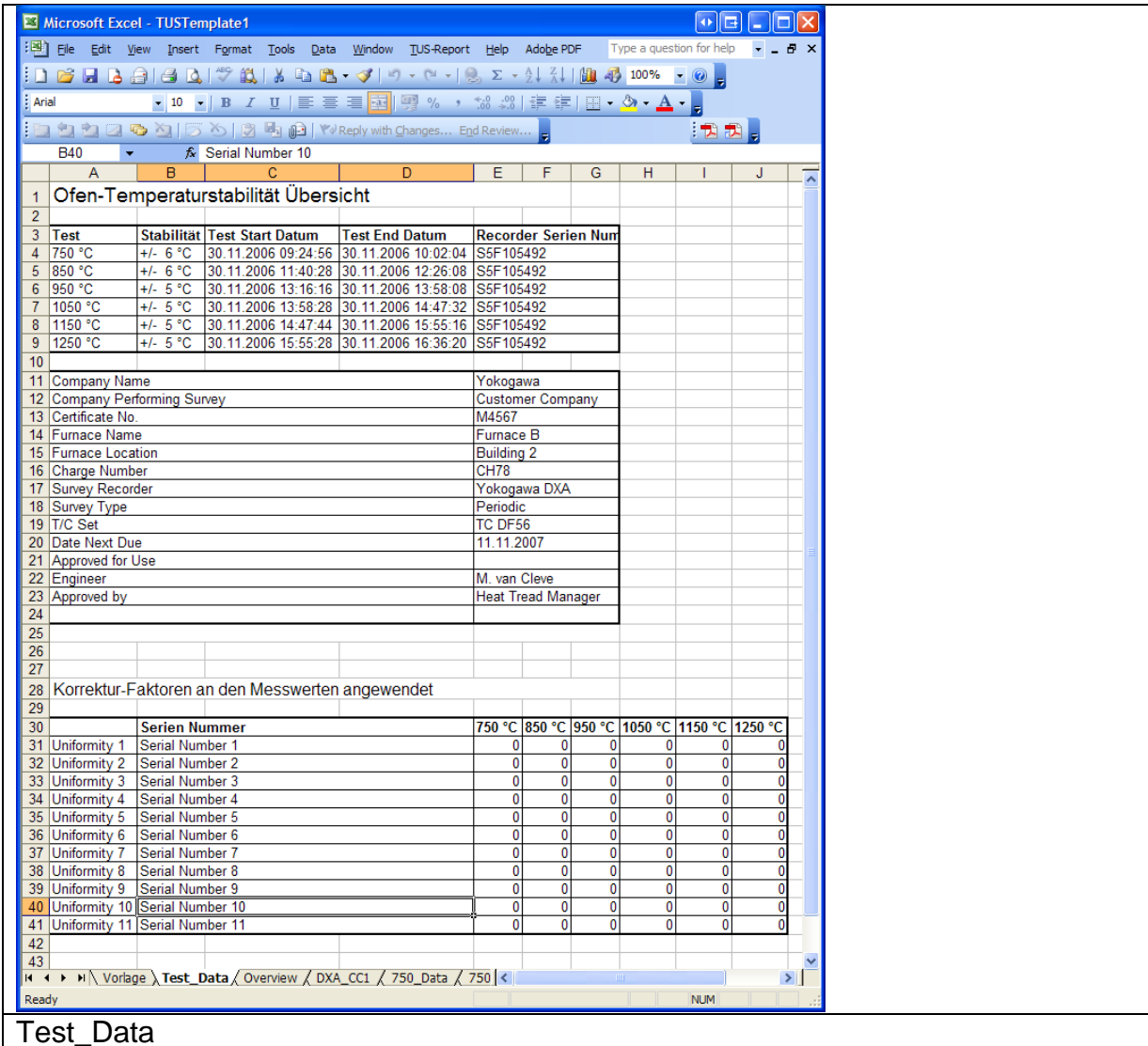
8.4 Create test protocol

After pressing „Create report" the test will be run in the background.
A file with the following data sheets is generated:

- Cover sheet with graph

- Test_Data

- Overview

- DXA_CC1 (if selected)

- Actual temperature data in Tabular form

- Actual temperature data in graphical form

Test_Data

The calculation results will be displayed on the overview page.

Overview

Data for the CC1 Option are displayed on the sheet DXA_CC1.
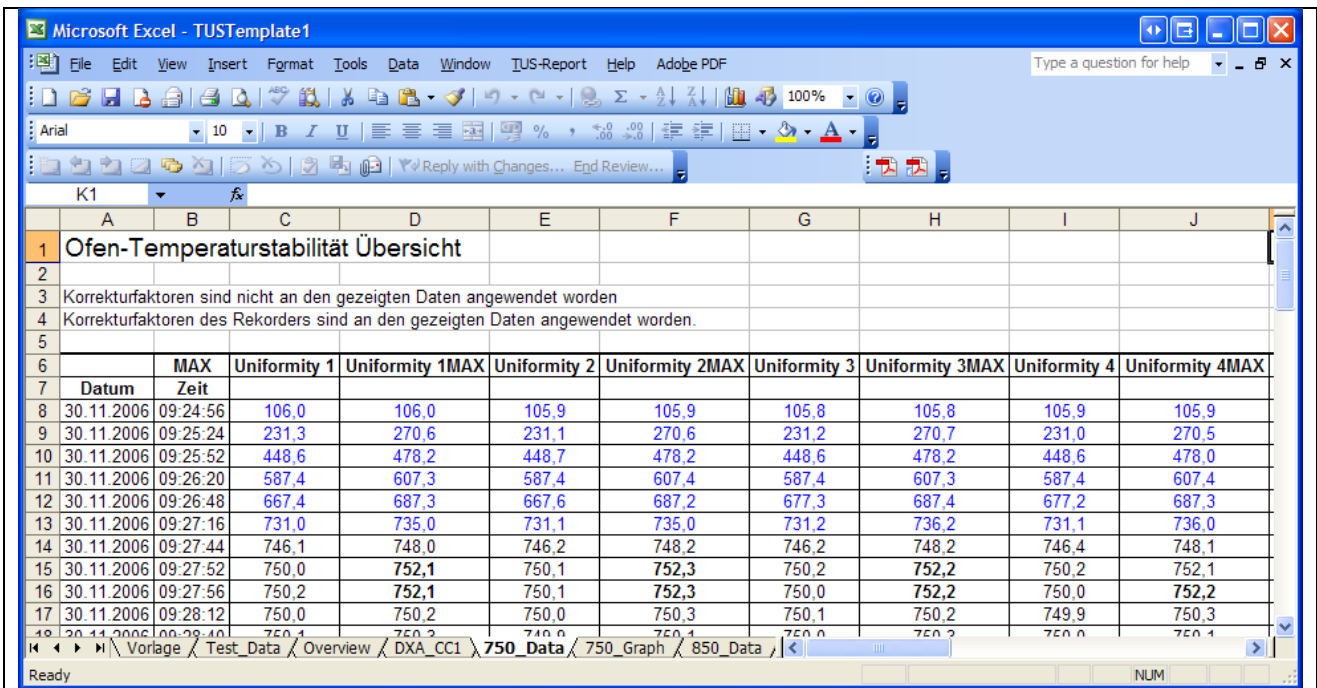
DXA_CC1

A tabular and graphic representation of all readings of the respective data files is portrayed on the following pages.

Tabular data display

Graphic data display
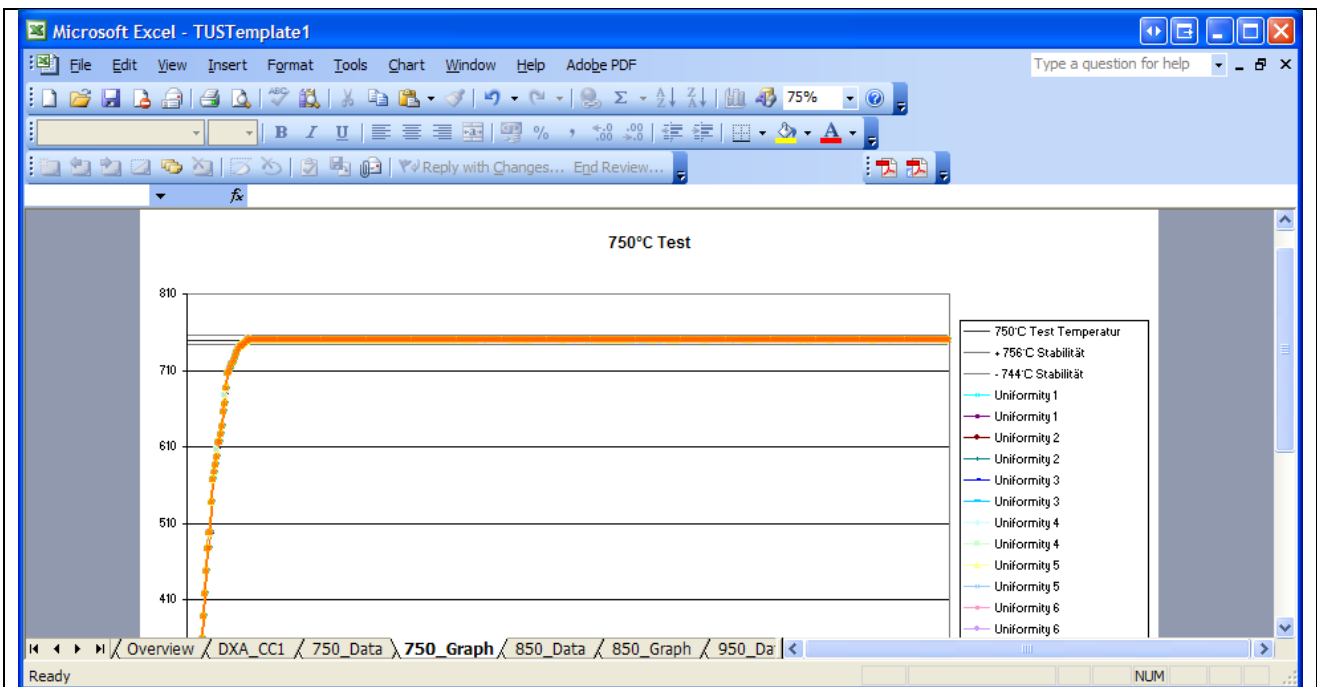
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9. **Generating Excel templates**

Through the report-function Excel Template it is possible to use all functions of MS Excel. For simple generation of the templates there is a "Template assistant".

9.1 **Creating a template**
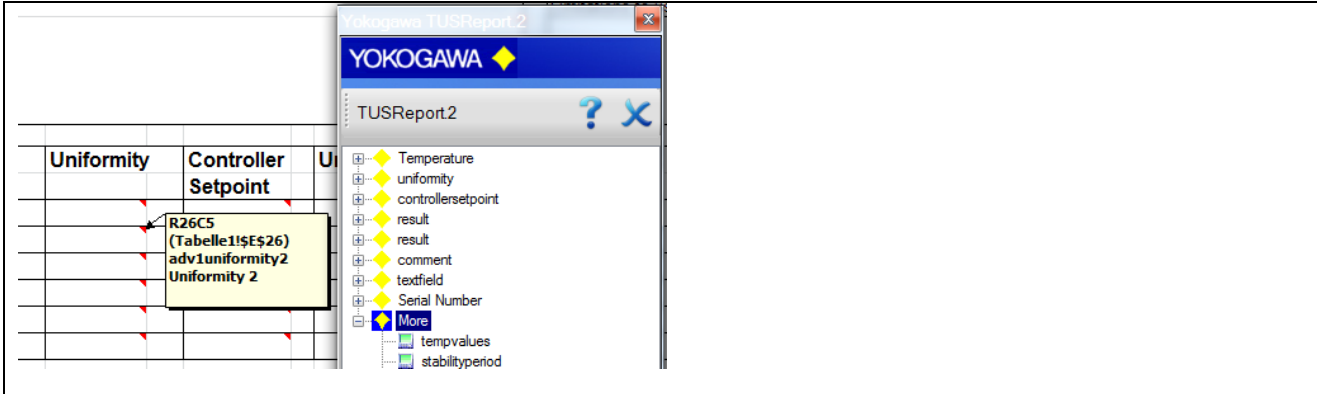
Having clicked on "Template creator" there will be a window shown with the device information.
In this window, all information relating to the specific recorder data is listed.
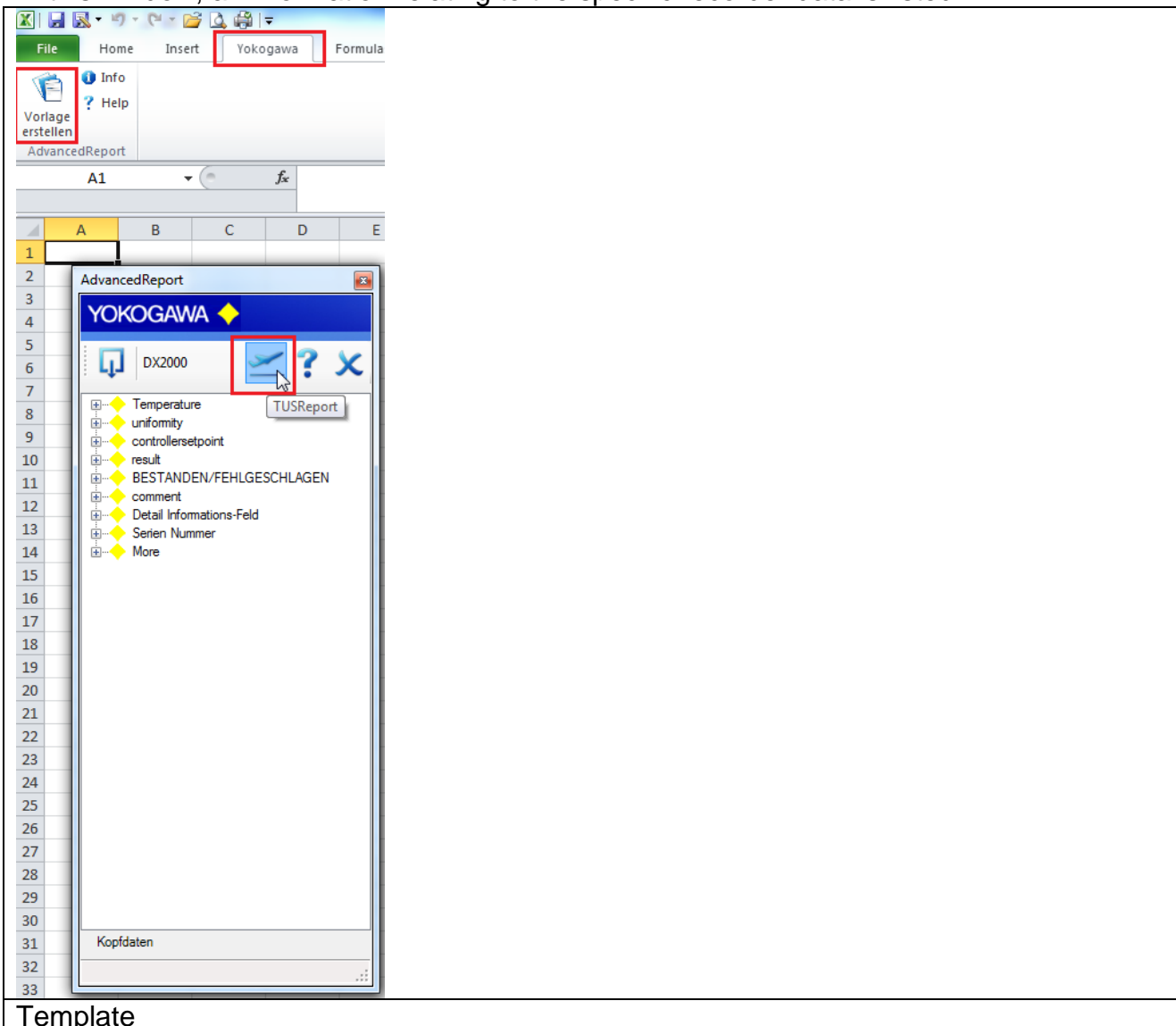
Template

With the Drag & Drop functionality, you can add information to the Excel sheet.

Drag & Drop

The entry is indicated by a small triangle in the upper right hand corner. Clicking on this triangle will highlight the field.

The first two sheets of a template-file are supported.

⚠️	**Note:** Each value can be used only once per sheet!

The template can be saved and used in Excel Default File format or as Excel template format.

9.2 Custom design template header/footer

It is also possible to create a separate sheet for the automatically generated report sheet.
Create a template file with the following separate sheets.

Name the sheets:
- TEST_DATA → the report sheet with the test data

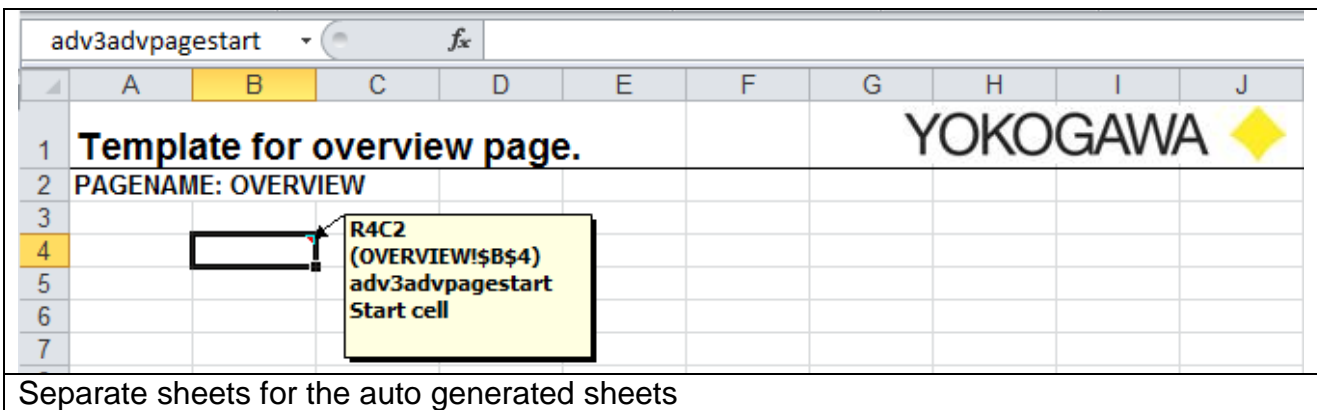- OVERVIEW → the report sheet with the result overview

- _DATA   → the report sheet with the temperature values, e.g. 750_DATA

Separate sheets for the auto generated sheets

To put the report on the different place like the cell 'A1' (default) use the cellname "advpagestart". You will find this placeholder in the template creator.

Also it is possible to put every other information from the template creator on every sheet in the report.

9.3 How to Check, Change or Delete the Cell Name in Excel?

To check all the correct Values implemented by the template creator, please use the following routine:

It's easy to name a cell. You click on the cell, put the cursor in the "Name Box" to the left of the Formula Bar (see image below), type a name, and press Enter. Then you can reference that cell in other parts of the workbook.

In the example below we have named the cell "Sub1" because we will reference this Subtotal in a Summary worksheet.

Cell Name

However, after naming a cell, it seems like Excel won't let you delete or change the name! If you click in the Name Box and type over the name or delete the name, nothing happens! The name remains.
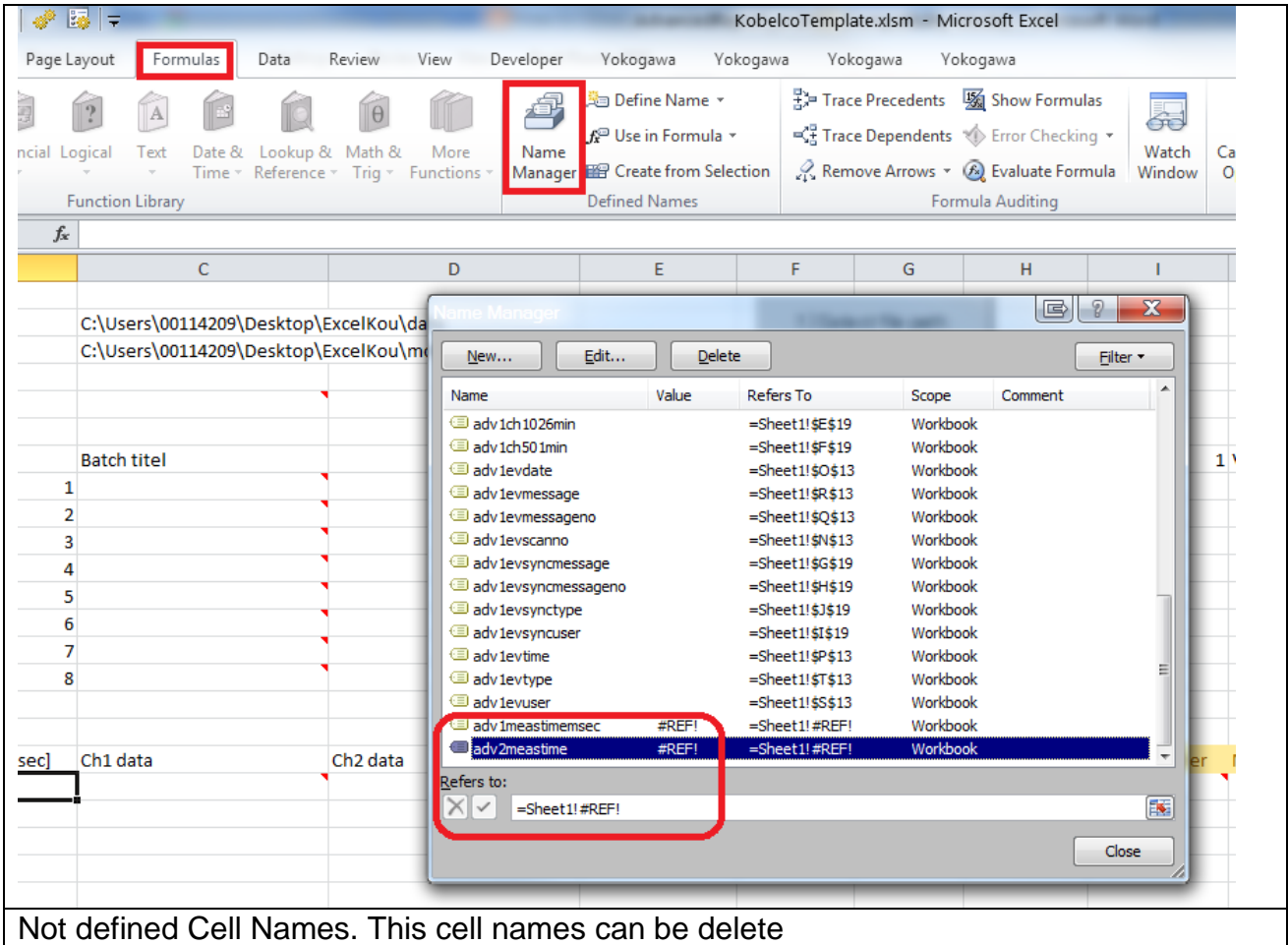
So, how do I change a cell name? How do I delete a cell name? It's pretty easy ... it's just hidden!

To delete or change a cell name, click the Formulas tab. Then click Name Manager on the "Defined Names" group of the Formulas ribbon.

The Name Manager window displays and lists ALL of the cell names that have ever been defined in the worksheets in that workbook.

To delete a cell name, click on the cell name and click Delete button.

To change a cell name, click on the cell name, click the Edit button, Change the name and click OK. When finished, click Close.

Not defined Cell Names. This cell names can be delete

9.4   Example data

After the installation of the software, some example templates are made available in the installation menu.

10. **Error handling**

If an error is recognized in the conversion or in general running of the program, this is indicated by an "Alert window" and registered in the error log.

Note:

1. Please read this chapter to solve the problem.
2. Use the Error Handling routine before calling your Services Team.



10.1   Solve Problem by yourself

"I installed my Office solution (VSTO add-in) successfully but when I open the Office application, my add-in does not load. What is the problem?"

This is a common question which I came across many times in Forums. Here are simple and quick checks that you can do before you start scratching your head or jump to the Forums. I'll be using Excel as the Office application, but the approach is applicable to others more or less.

10.1.1 Check out "COM Add-Ins" dialog in Excel

Now open Excel and see if your add-in loads successfully. If not, open Excel Options dialog (File->Options) and navigate to Add-Ins tab.
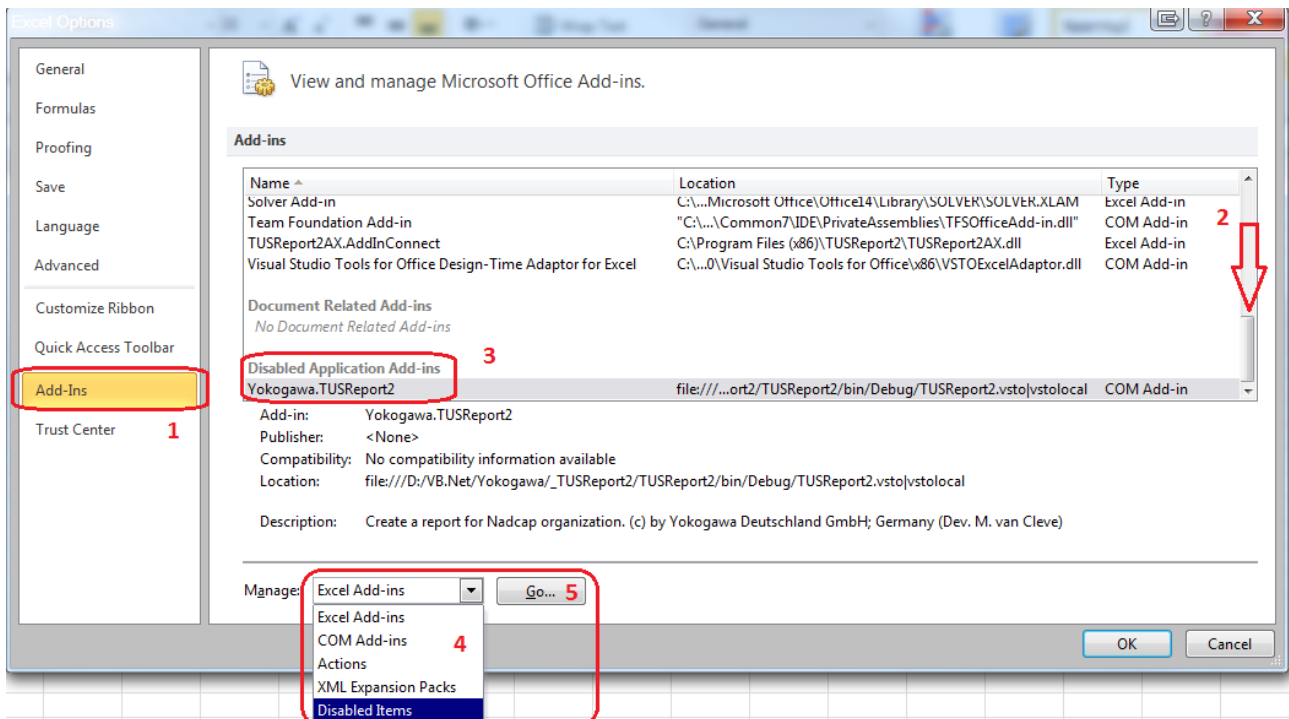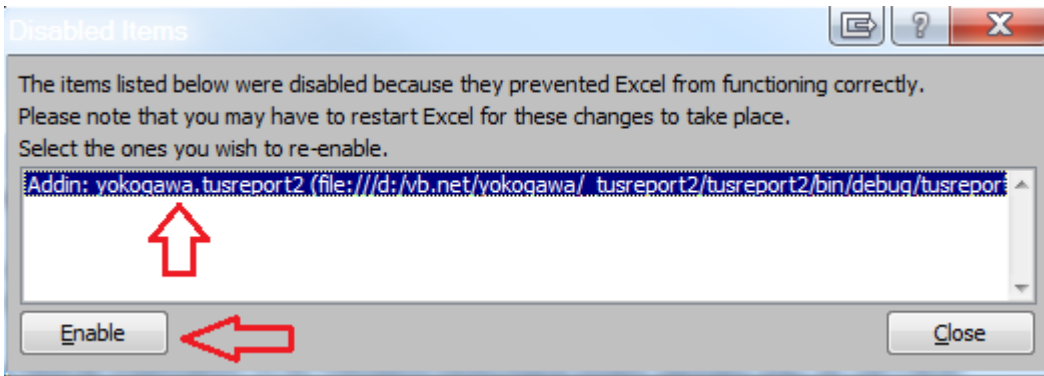
"Healthy add-ins" show up as "Active Application Add-ins", however, if an add-in is disabled for whatever reason, it will appear under the "Inactive Application Add-ins". You can select the "COM Add-ins" from the Manage dropdown at the bottom of this dialog and see the LoadBehavior of all COM add-ins. In normal cases, the add-in should be checked and its "Load Behavior" should be "Loaded at Startup":
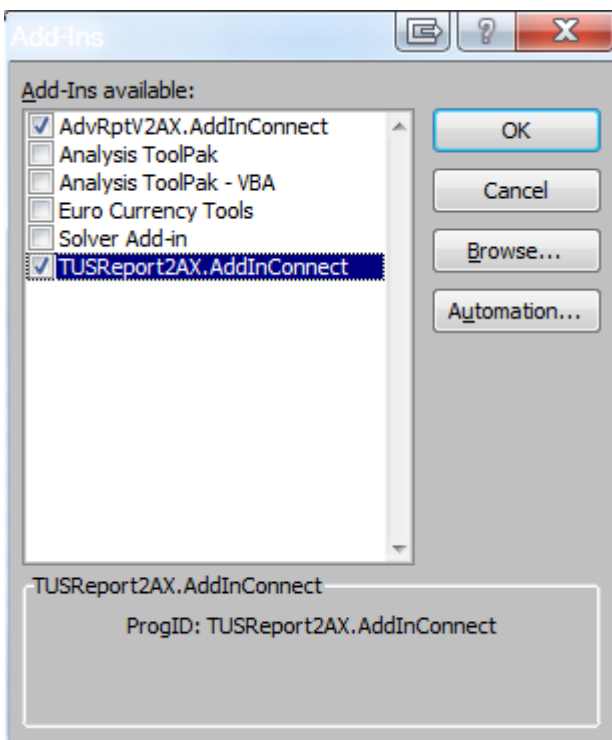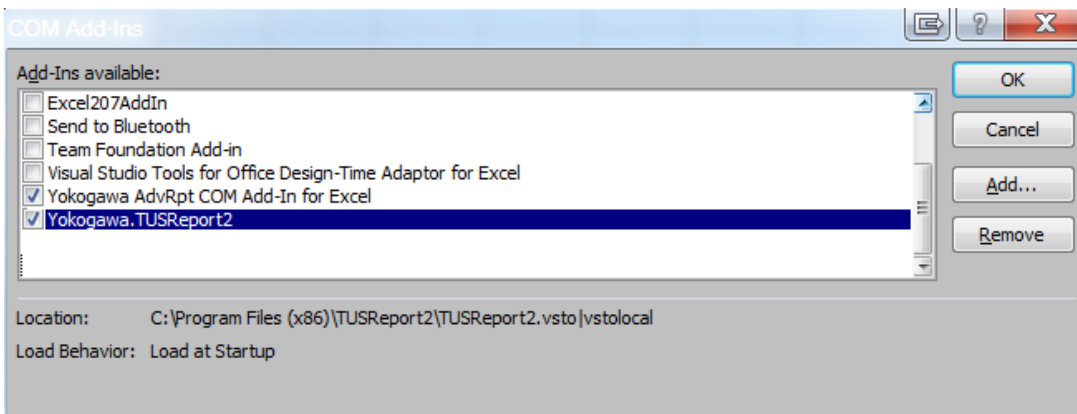
If the VSTO runtime encounters a problem loading the add-in, you'll see this message instead.

"Load Behavior: Not Loaded. A runtime error occurred during the loading of the COM Add-in".

10.1.2 Find the problem

Set the "VSTO_SUPPRESSDISPLAYALERTS" environment variable to 0. Then go back to the registry key I mentioned in step 1 and set the LoadBehavior to 3. Now restart the Excel. You should be able to see a dialog describing what is happening:
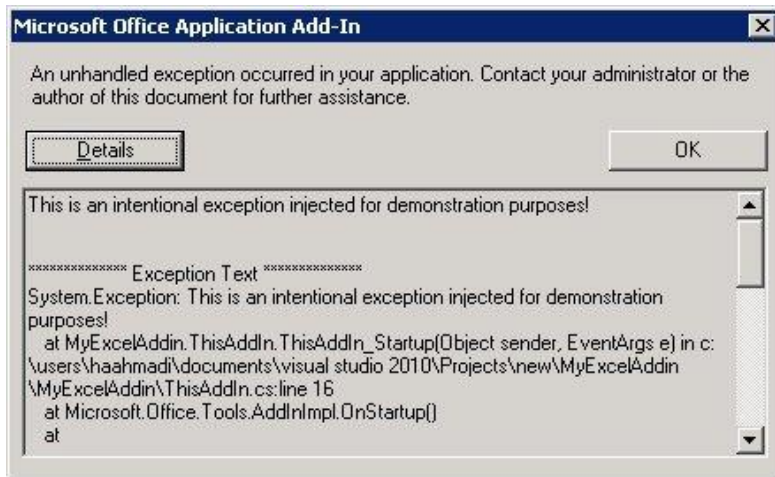
It is also a good practice to enclose the code inside the add-in's startup event in a try-catch block and log all exceptions.

10.1.3 Make sure your add-in is installed correctly and it is enabled

Open registry editor and navigate to "HKEY_CURRENT_USER\Software\Microsoft\Office\Excel\Addins". Here is how this registry key looks like after I installed MyExcelAddin:
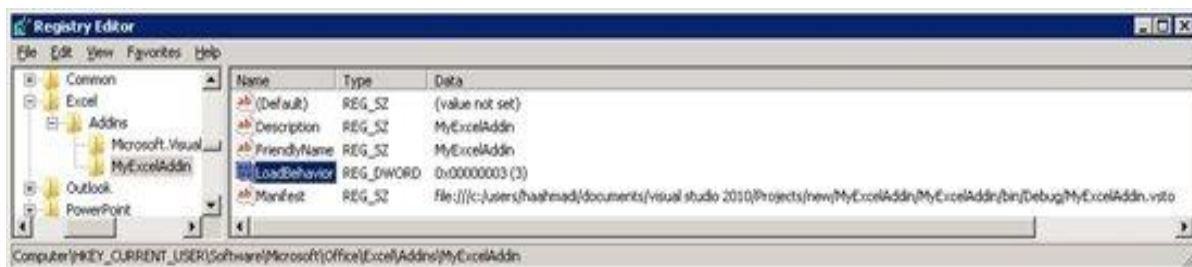
The registry string we are interested in the most is the LoadBehavior. Whenever you see "3" (Loaded at Startup) as the value of this string you are good in this part and your add-in tries to load when the Excel starts. For more information about registry entries for application-level Office solutions see this article on Microsoft site.

http://msdn.microsoft.com/en-us/library/bb386106.aspx

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