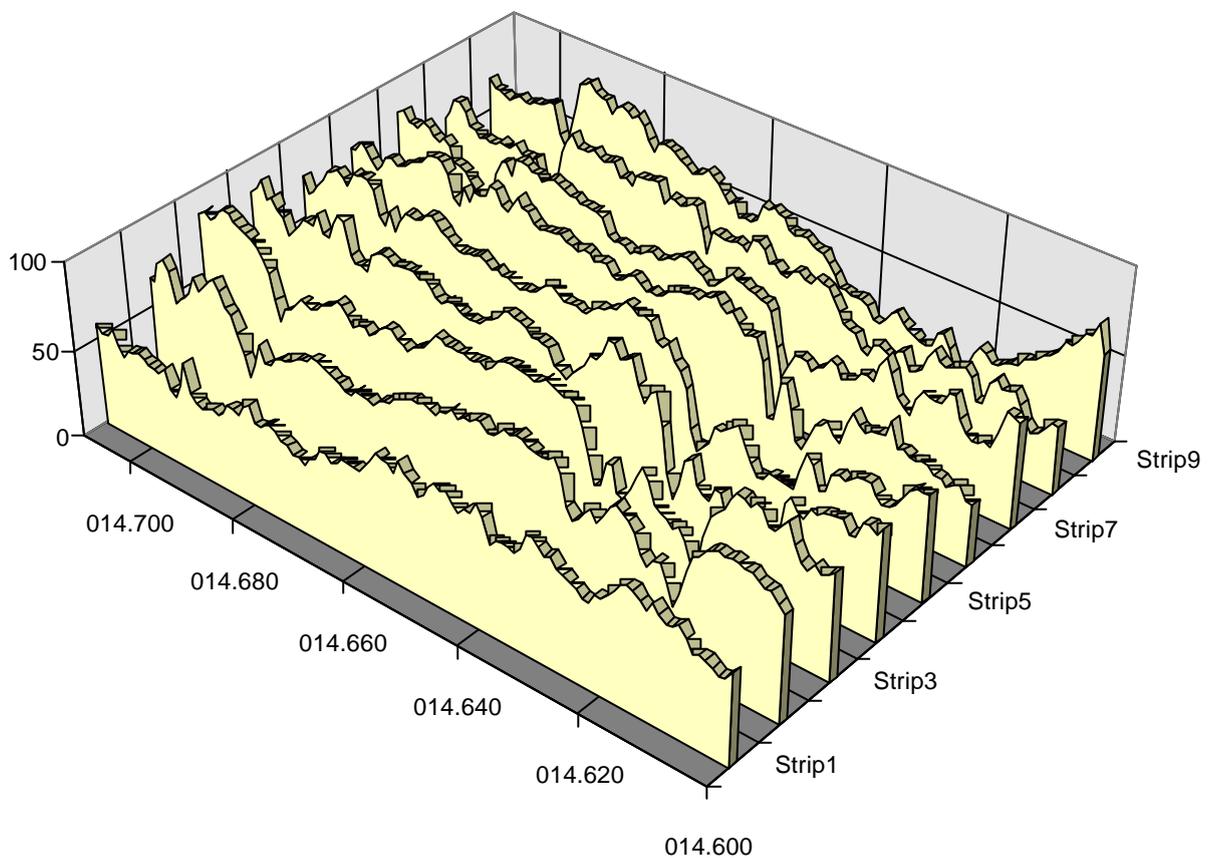


---

Excel add-in for processing  
and analysing CDS-data

**CdsComXL**

---



# Contents

---

<b>1. Installation</b>	<b>1</b>
<b>2. Usage</b>	<b>1</b>
<b>3. Setup</b>	<b>2</b>
<b>4. Transmission of data from CDS</b>	<b>2</b>
<b>5. Listing of CDS-areas</b>	<b>3</b>
<b>6. Table of CMV-data</b>	<b>4</b>
<b>7. Printout of CCC-report</b>	<b>5</b>
<b>8. Show CCC-report</b>	<b>6</b>

# CdsComXL

An EXCEL Add-in to be used for the handling of CDS-data.

## 1. Installation

Copy the file "CdsComXL.XLL" from the diskette to your EXCEL-directory.

## 2. Usage

Start EXCEL.

Open "CdsComXL.XLL". A new menu is then added to the main menubar in EXCEL as in Figure 1.

If you want CdsComXL to start automatically every time EXCEL is launched, you can either copy the XLL-file to EXCEL's startup-directory or use EXCEL's Tools/Add-ins... to install CdsComXL permanently in EXCEL.

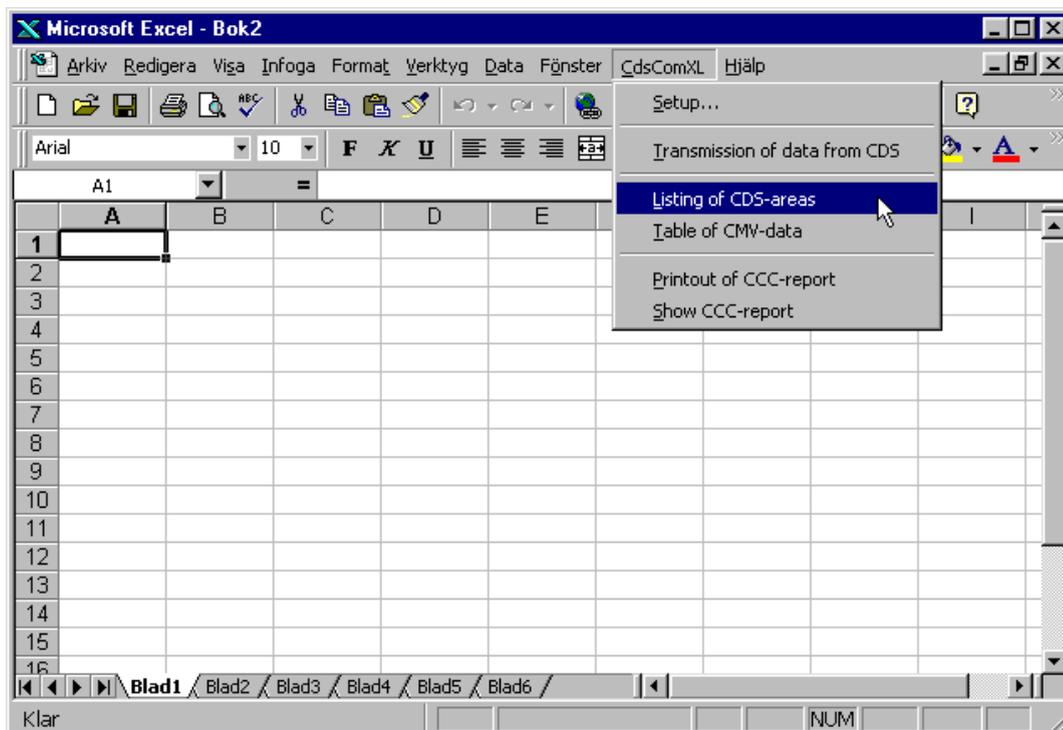


Figure 1. New menu in EXCEL.

### 3. Setup

Shows a dialog (Figure 2) where you can specify

- the search path for data files
- the first letter (prefix) for the file names you wish to use
- the COM-port to be used for connection of CDS
- the extent of result-tables you want.

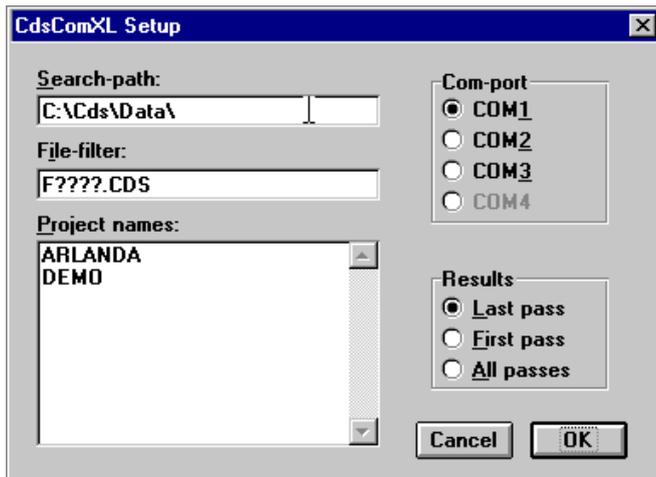


Figure 2. Setup dialog.

### 4. Transmission of data from CDS

This menu selection is used when you want to transfer data from a CDS to your PC.

Before starting data transmission, select a new blank sheet in EXCEL.

Initially a message is shown to indicate that EXCEL is prepared for reception of data. Figure 3. Pressing OK will put the program in reception mode waiting for data to arrive on the COM-port that you have selected in Setup.

The data transmission can then be started at any time on the CDS.

If there is some problem with the transmission or if you want to leave the data reception mode for some other reason, just press the ESC-button.

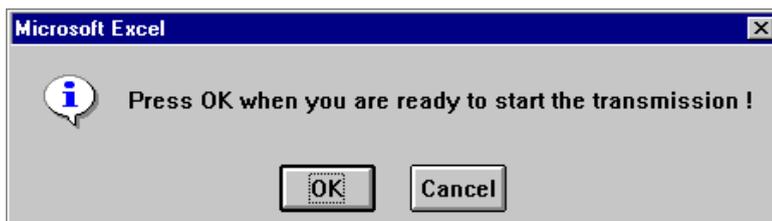


Figure 3. Transmission of data from CDS.

When the data transmission has started, EXCEL displays the activity on the current sheet according to Figure 4.

At first a heading is printed, showing how many CDS-areas will be sent and the name of the file to receive the data.

After the completed transmission of a CDS-area, a line of text is printed. This allows you to follow the progress of the transmission. The text lines show a few key data for the transferred CDS-areas:

1. The number of the area.
2. Project name.
3. Start section.
4. Recorded length.
5. Number of passes recorded in each strip.
6. Date and time when the area was recorded in CDS.

	A	B	C	D	E	F	G	H
1								
2		Transmission of CDS-data - 12 areas		File : F1018.CDS				
3	1	DEMO	015.000	-120.0	4444444440	94-06-13	15:34	
4	2	DEMO	014.060	-82.0	4444444440	94-06-14	08:12	
5	3	DEMO	014.240	61.0	4444444440	94-06-14	10:44	
6	4	DEMO	014.060	101.0	4444444440	94-06-14	15:16	
7	5	DEMO	014.160	100.0	1111111110	94-06-14	15:43	
8	6	DEMO	014.600	120.0	7644444441	94-06-21	10:17	
9	7	DEMO	014.480	120.0	4454444440	94-06-25	09:54	
10	8	DEMO	014.360	121.0	4444444440	94-06-25	12:34	
11	9	DEMO	014.240	120.0	4444444440	94-06-25	15:37	
12	10	DEMO	014.240	-121.0	5444444440	94-06-27	08:05	
13	11	DEMO	014.120	-120.0	4445444440	94-06-27	10:47	
14	12	DEMO	014.000	-120.0	4444444440	94-06-27	14:04	
15								
16								

*Figure 4. Transmission of data from CDS.*

## 5. Listing of CDS-areas

By making this menu selection, a list is produced of all the CDS-areas of a certain group presently stored in the PC. The group of files is defined by the "search-path" and the "file-filter" that you have set in the Setup dialog.

A table is printed on the active EXCEL-sheet, each row representing one recorded CDS-area.

The total number of areas is limited by the maximum available rows on an EXCEL-sheet, which is equal to 65536.

The list can be sorted and manipulated with all the tools available in EXCEL. For instance it is often useful to sort the whole list on **Project** and **SSect** (start section of the recording). This way it is easy to locate the recordings of a certain part of the project and quickly assess if recordings are available or not.

File	Rec	Filedate	FTime	RecDate	RTime	Project	Roller	LType	SSect	Length	RefDist	Adj	Area	Layer	Passes
F0018	3	90-07-04	08:49	90-06-29	11:31	ARLANDA	TEST	3	013.675	-114.1	0	9	A	2	6444444440
F0018	4	90-07-04	08:49	90-07-02	12:15	ARLANDA	TEST	3	013.560	-119.6	0	9	A	2	5444444440
F0018	5	90-07-04	08:49	90-07-02	15:04	ARLANDA	TEST	3	013.440	-119.6	0	9	A	2	4444444440
F1017	1	96-08-15	09:56	94-06-13	15:34	DEMO	TEST	3	015.000	-120.0	123.0	9	A	2	4444444440
F1017	2	96-08-15	09:56	94-06-14	08:12	DEMO	TEST	3	014.060	-82.0	123.0	9	A	2	4444444440
F1017	3	96-08-15	09:56	94-06-14	10:44	DEMO	TEST	3	014.720	61.0	123.0	9	A	2	4444444440
F1017	4	96-08-15	09:56	94-06-14	15:16	DEMO	TEST	3	014.060	101.0	123.0	9	A	2	4444444440
F1017	5	96-08-15	09:56	94-06-14	15:43	DEMO	TEST	3	014.160	100.0	123.0	9	A	2	1111111110
F1017	6	96-08-15	09:56	94-06-21	10:17	DEMO	TEST	3	014.600	120.0	123.0	9	A	2	7644444441
F1017	7	96-08-15	09:56	94-06-25	09:54	DEMO	TEST	3	014.480	120.0	123.0	9	A	2	4454444440
F1017	8	96-08-15	09:56	94-06-25	12:34	DEMO	TEST	3	014.360	121.0	123.0	9	A	2	4444444440
F1017	9	96-08-15	09:56	94-06-25	15:37	DEMO	TEST	3	014.240	120.0	123.0	9	A	2	4444444440
F1017	10	96-08-15	09:56	94-06-27	08:05	DEMO	TEST	3	014.240	-121.0	123.0	9	A	2	5444444440
F1017	11	96-08-15	09:56	94-06-27	10:47	DEMO	TEST	3	014.120	-120.0	123.0	9	A	2	4445444440
F1017	12	96-08-15	09:56	94-06-27	14:04	DEMO	TEST	3	014.000	-120.0	123.0	9	A	2	4444444440

Figure 5. Table of CDS-areas.

## 6. Table of CMV-data

This menu selection is used if you want to study the recorded CDS-data in detail. CMV-values can be drawn as a diagram over a certain stretch or CMV-values may be needed at certain spots, where there are point test results and a calibration diagram has to be produced.

In the dialog **Setup** there are three alternatives for result output, namely

- **Last pass**, that prints a table containing the results from the last pass that was recorded in the section and strip in question.
- **First pass**, that prints a table containing the results from the first pass.
- **All passes** that prints 8 tables side by side containing the results from pass 1 to pass 8 for each strip. The table may not be filled if all 10 strips were not used or if less than 8 passes were made. Missing data is marked by '-'.

To make a table of CMV-values, the CDS-areas to be included must first be selected and then the menu alternative **Table of CMV-data**. The new table is then calculated and written on the same sheet to the right of the table of CDS-areas.

A sample result is shown in Figure 6. **Last pass** was selected in this example.

The table contains columns for Section and CMV-value in up to 10 strips. Four extra columns are added to facilitate keeping track of the rows of the table if it is later sorted:

- **File** The name of the file containing the data.
- **Rec** The number of the recording in the file in question.
- **Dx** The length along the ground (in meters) that each CMV represents.
- **SW** The effective strip width according to the value input in the CDS.

To avoid errors, it is important to select the entire table, including the four extra columns, before any sorting is made.

Section	Strip1	Strip2	Strip3	Strip4	Strip5	Strip6	Strip7	Strip8	Strip9	Strip10	File	Rec	Dx	SW
014.600	51.6	60.0	60.5	62.8	61.4	34.7	60.5	39.4	60.9	47.3	F0017	6	1.09	1.70
014.601	46.9	63.8	58.6	58.1	60.0	35.6	62.3	38.9	76.9	47.8	F0017	6	1.09	1.70
014.602	45.9	68.9	56.7	61.9	60.5	42.2	63.8	34.7	68.9	48.8	F0017	6	1.09	1.70
014.603	48.3	68.9	59.5	61.4	57.7	41.3	50.6	30.9	68.9	48.3	F0017	6	1.09	1.70
014.604	50.6	70.8	54.8	52.0	53.4	38.0	40.8	29.5	62.3	44.5	F0017	6	1.09	1.70
014.605	51.6	73.6	57.7	51.6	47.3	41.3	42.7	32.8	59.1	45.9	F0017	6	1.09	1.70
014.607	49.7	73.1	65.2	58.1	44.5	41.7	39.4	42.2	59.5	49.2	F0017	6	1.09	1.70
014.608	56.3	75.0	75.9	57.7	43.6	45.0	38.9	47.8	52.5	52.0	F0017	6	1.09	1.70
014.609	61.9	75.5	72.7	56.7	46.9	45.9	41.7	46.9	48.3	51.6	F0017	6	1.09	1.70
014.610	59.5	74.5	67.0	56.3	52.5	44.5	48.3	45.5	46.4	53.4	F0017	6	1.09	1.70
014.611	58.6	75.9	67.5	53.4	52.5	44.5	60.5	50.2	42.7	45.0	F0017	6	1.09	1.70
014.612	62.3	74.5	75.0	54.4	52.0	47.3	60.0	46.9	40.8	35.2	F0017	6	1.09	1.70
014.613	66.1	72.2	76.9	47.3	49.7	46.4	53.0	33.8	39.4	34.7	F0017	6	1.09	1.70
014.614	60.5	67.0	73.1	50.2	46.4	59.5	52.5	33.3	34.7	39.4	F0017	6	1.09	1.70
014.615	63.3	65.2	75.9	56.3	48.3	50.6	52.5	44.5	34.2	44.5	F0017	6	1.09	1.70
014.616	67.5	56.3	77.3	51.6	46.4	50.2	53.9	49.2	32.3	46.4	F0017	6	1.09	1.70

Figure 6. Table with CMV-values for the last pass.

## 7. Printout of CCC-report

The CCC-report can be output to a printer connected to the PC and selected as default Windows printer.

Before selecting the menu alternative **Printout of CCC-report** the rows in the CDS-area table (Figure 5) should be selected. It does not matter how many columns that are included in the selection.

At the top of the EXCEL-sheet there are cells pointed out by the texts **Limits:** and **Req:** that contain the values used the last time a printout was made. The values specify the transitions between the different grey-tones in the CDS-picture the same way as in the CDS itself.

If you want the printout to use the limits that were used by the roller driver at the recording, just set all four values to zero.

## 8. Show CCC-report

The CCC-reports can be shown on the screen. This is useful as a print preview before printing or as a possibility to check the reports if there is no printer available.

Before selecting the menu alternative **Show CCC-report** the rows in the CDS-area table (Figure 5) should be selected. It does not matter how many columns are included in the selection.

At the top of the EXCEL-sheet there are cells pointed out by the texts **Limits:** and **Req:** that contain the values used the last time a printout was made. The values specify the transitions between the different grey-tones in the CDS-picture the same way as in the CDS itself.

If you want the printout to use the limits set by the roller driver at the recording, just set all four values to zero.

The CCC-reports are drawn on the screen and can be selected and moved or copied to another Excel-sheet or to another document – e.g. a Word-document.

Please note that the graphic part of the report may be hard to read if a zoom level less than 100% is used or if the size of the report is changed.

When a report page is drawn on the screen, a report file is also created in the directory entered in the **Setup**-dialog, having a filename corresponding to the name of the CDS data file and the area number. As an example the report file for area 3 of file F0017.CDS will be named F0017\_3.EMF.

The EMF-files can be inserted in Word-, Excel- or PowerPoint-documents or they can be used for sending CCC-reports by email.