

DCC-database og automation

ay@forcetechnology.com

Andreas Lyndrup Jensen

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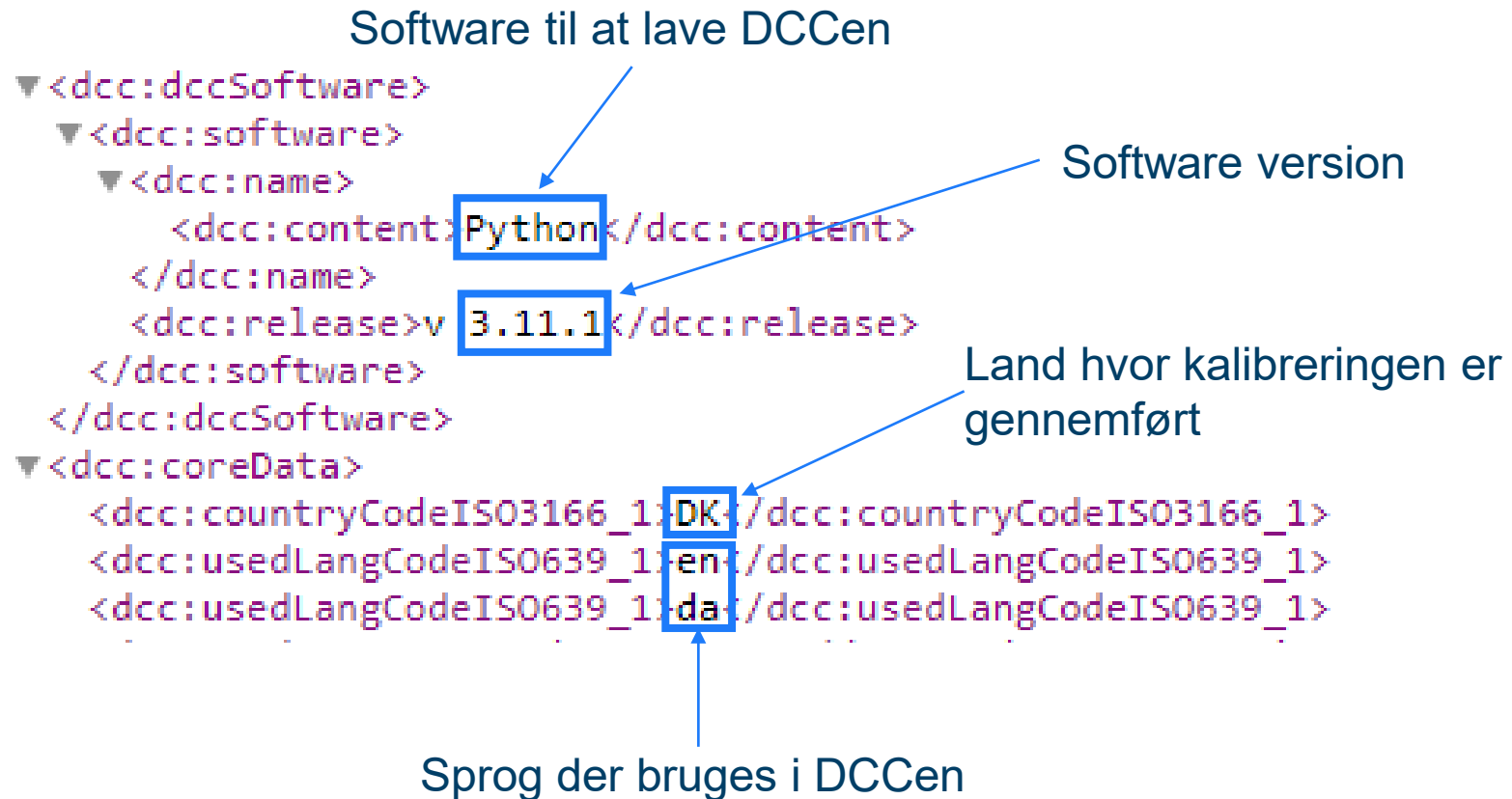
Program

- DCC opbygning
- Sammenhæng mellem DCC og data
- Database i forhold til Excel
- DCC automation
- Status

DCC opbygning

```
▼<dcc:dccSoftware>  
  ▼<dcc:software>  
    ▼<dcc:name>  
      <dcc:content>Python</dcc:content>  
    </dcc:name>  
    <dcc:release>v 3.11.1</dcc:release>  
  </dcc:software>  
</dcc:dccSoftware>  
▼<dcc:coreData>  
  <dcc:countryCodeISO3166_1>DK</dcc:countryCodeISO3166_1>  
  <dcc:usedLangCodeISO639_1>en</dcc:usedLangCodeISO639_1>  
  <dcc:usedLangCodeISO639_1>da</dcc:usedLangCodeISO639_1>
```

DCC opbygning

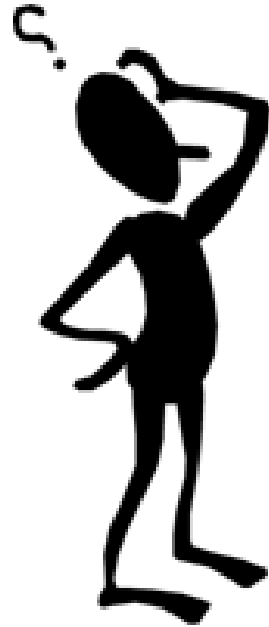


DCC opbygning

Hierarkisk regelopbygning

```
▼ <dcc:dccSoftware>
  ▼ <dcc:software>
    ▼ <dcc:name>
      <dcc:content>          </dcc:content>
    </dcc:name>
    <dcc:release>v          </dcc:release>
  </dcc:software>
</dcc:dccSoftware>
▼ <dcc:coreData>
  <dcc:countryCodeISO3166_1> </dcc:countryCodeISO3166_1>
  <dcc:usedLangCodeISO639_1> </dcc:usedLangCodeISO639_1>
  <dcc:usedLangCodeISO639_1> </dcc:usedLangCodeISO639_1>
```

Sammenhæng mellem DCC og data



```

<dcc:quantity refType="basic_measuredValue">
  <dcc:name>
    <dcc:content lang="de">Mittelwert der Anzeige des Kalibriergegenstands
    </dcc:content>
    <dcc:content lang="en">Mean value of the display of the calibration item
    </dcc:content>
  </dcc:name>
  <si:hybrid>
    <si:realListXMLEList>
      <si:valueXMLEList>94939.5 96984.7 97861.7 99029.7 99906.9 101074.9 101952
        .1 102829.1 104873.8</si:valueXMLEList>
      <si:unitXMLEList>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:
        unitXMLEList>
    </si:realListXMLEList>
    <si:realListXMLEList>
      <si:valueXMLEList>949.395 969.847 978.617 990.297 999.069 1010.749 1019
        .521 1028.291 1048.738</si:valueXMLEList>
      <si:unitXMLEList>|mbar</si:unitXMLEList>
    </si:realListXMLEList>
  </si:hybrid>
</dcc:quantity>
<dcc:quantity refType="basic_measurementError">

```

	ac									
10390	0,0	0	-	-	-	-	-		...	L
10391	1530,6	1534	-2,6	1,6	3,4	1	1		...	L
10392	3001,4	3010	-3,1	1,8	5,1	1	1		...	L
10393	4501,4	4515	-3,9	1,9	6,9	1	1		...	L
10394	6001,0	6020	-4,4	2,4	7,8	1	1		...	L
10395	9001,0	9034	-2,1	2,6	7,1	1	1		...	L
10396	10500,2	10540	-1,1	3,2	7,2	1	1		...	L
10397	11999,4	12047	0,8	3,6	5,7	1	1		...	L
10398	14999,8	15065	6,7	4,3	4,3	1	1		...	L
10399	0,0	0	0,0	-	-	-	-		...	L

Sammenhæng mellem DCC og data

Left window: [Redacted] [Redacted]

Right window: [Redacted] [Redacted]

Bottom window: sand_værdi [Redacted] enhed_sand [Redacted]

```
GEMIM3 v1.4.1  
27 </dcc:identifications>  
28 <dcc:beginPerformanceDate>1957-08-13</dcc:beginPerformanceDate>  
29 <dcc:endPerformanceDate>1957-08-13</dcc:endPerformanceDate>
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347 <si:realListXMLList>  
348 <si:valueXMLList>949.984 970.444 979.215 990.897 999.671 1011.354 1020  
349 .126 1028.900 1049.358</si:valueXMLList>  
<si:unitXMLList>mbar</si:unitXMLList>
```

Data fra Excel

Arbejdsnormal	Enhed	$P_{normal,i1-op}$	$P_{normal,i2'-ned}$	$P_{normal,i3-op}$	$P_{normal,i4'-ned}$
		Se celle C14:C28 for enhed			
AE.01	°				
AE.01	°				
AE.01	°				

Data fra Excel

Arbejdsnormal	Enhed	$P_{\text{normal},i1\text{-op}}$	$P_{\text{normal},i2'\text{-ned}}$	$P_{\text{normal},i3\text{-op}}$	$P_{\text{normal},i4'\text{-ned}}$
		Se celle C14:C28 for enhed			
AE.01	°	1,000000			
AE.01	°				
AE.01	°				

Data fra Excel

Arbejdsnormal	Enhed	$P_{normal,i1-op}$	$P_{normal,i2'-ned}$	$P_{normal,i3-op}$	$P_{normal,i4'-ned}$
		Se celle C14:C28 for enhed			
AE.01	°	1,000000			
AE.01	°	2,000000			
AE.01	°				

Data fra Excel

Arbejdsnormal	Enhed	$P_{\text{normal},i1\text{-op}}$	$P_{\text{normal},i2'\text{-ned}}$	$P_{\text{normal},i3\text{-op}}$	$P_{\text{normal},i4'\text{-ned}}$
		Se celle C14:C28 for enhed			
AE.01	°	1,000000			
AE.01	°	2,000000			
AE.01	°	3,000000			

Data fra Excel

Arbejdsnormal	Enhed	$P_{normal,i1-op}$	$P_{normal,i2'-ned}$	$P_{normal,i3-op}$	$P_{normal,i4'-ned}$
		Se celle C14:C28 for enhed			
AE.01	°	1,000000			
AE.01	°	2,000000			
AE.01	°	3,000000	3,000000		

Data fra Excel

Arbejdsnormal	Enhed	$P_{\text{normal},i1\text{-op}}$	$P_{\text{normal},i2'\text{-ned}}$	$P_{\text{normal},i3\text{-op}}$	$P_{\text{normal},i4'\text{-ned}}$
		Se celle C14:C28 for enhed			
AE.01	°	1,000000			
AE.01	°	2,000000	2,000000		
AE.01	°	3,000000	3,000000		

Data fra Excel

Arbejdsnormal	Enhed	$P_{\text{normal},i1\text{-op}}$	$P_{\text{normal},i2'\text{-ned}}$	$P_{\text{normal},i3\text{-op}}$	$P_{\text{normal},i4'\text{-ned}}$
		Se celle C14:C28 for enhed			
AE.01	°	1,000000	1,000000		
AE.01	°	2,000000	2,000000		
AE.01	°	3,000000	3,000000		

Data fra Excel

Arbejdsnormal	Enhed	$P_{\text{normal},i1\text{-op}}$	$P_{\text{normal},i2'\text{-ned}}$	$P_{\text{normal},i3\text{-op}}$	$P_{\text{normal},i4'\text{-ned}}$
		Se celle C14:C28 for enhed			
AE.01	°	1,000000	1,000000	1,000000	1,000000
AE.01	°	2,000000	2,000000	2,000000	2,000000
AE.01	°	3,000000	3,000000	3,000000	3,000000

Data fra Excel

11	Vakuum	Nej	0	Reference indikation (Rå værdi)						DUT indikation (Rå værdi)			
12	Nominel værdi	Arbejdsnormal	Enhed	$P_{normal,i1-op}$	$P_{normal,i2'-ned}$	$P_{normal,i3-op}$	$P_{normal,i4'-ned}$	$P_{normal,i5-op}$	$P_{normal,i6'-ned}$	$P_{DUTi1-op}$	$P_{DUTi2'-ned}$	$P_{DUTi3-op}$	$P_{DUTi4'-ned}$
13				Se celle C14:C28 for enhed						torr			
14	1,000	AE.01	°	1,000000	1,000000	1,000000	1,000000			1,000000	1,000000	1,000000	1,000000
15	2,000	AE.01	°	2,000000	2,000000	2,000000	2,000000			2,000000	2,000000	2,000000	2,000000
16	3,000	AE.01	°	3,000000	3,000000	3,000000	3,000000			3,000000	3,000000	3,000000	3,000000

Data fra Excel

11	Vakuum	Nej	0	Reference indikation (Rå værdi)						DUT indikation (Rå værdi)			
12	Nominal værdi	Arbejdsnormal	Enhed	$P_{normal,i1-op}$	$P_{normal,i2'-ned}$	$P_{normal,i3-op}$	$P_{normal,i4'-ned}$	$P_{normal,i5-op}$	$P_{normal,i6'-ned}$	$P_{DUTi1-op}$	$P_{DUTi2'-ned}$	$P_{DUTi3-op}$	$P_{DUTi4'-ned}$
13				Se celle C14:C28 for enhed						torr			
14	1,000	AE.01	°	1,000000	1,000000	1,000000	1,000000			1,000000	1,000000	1,000000	1,000000
15	2,000	AE.01	°	2,000000	2,000000	2,000000	2,000000			2,000000	2,000000	2,000000	2,000000
16	3,000	AE.01	°	3,000000	3,000000	3,000000	3,000000			3,000000	3,000000	3,000000	3,000000

Data fra Excel

Sheet "målinger"

11	Vakuum	Nej	0	Reference indikation (Rå værdi)						DUT indikation (Rå værdi)			
12	Nominel værdi	Arbejdsnormal	Enhed	$P_{normal,i1-op}$	$P_{normal,i2'-ned}$	$P_{normal,i3-op}$	$P_{normal,i4'-ned}$	$P_{normal,i5-op}$	$P_{normal,i6'-ned}$	$P_{DUTi1-op}$	$P_{DUTi2'-ned}$	$P_{DUTi3-op}$	$P_{DUTi4'-ned}$
13				Se celle C14:C28 for enhed						torr			
14	1,000	AE.01	°	1,000000	1,000000	1,000000	1,000000			1,000000	1,000000	1,000000	1,000000
15	2,000	AE.01	°	2,000000	2,000000	2,000000	2,000000			2,000000	2,000000	2,000000	2,000000
16	3,000	AE.01	°	3,000000	3,000000	3,000000	3,000000			3,000000	3,000000	3,000000	3,000000

Sheet "stamdata"

Vælg sprog	Dansk
Vælg sprog 2 (sporbar)	Engelsk
Certifikat dato	
Kalibrerings dato	
Certifikatnummer	2 - Løbenummer
Antal sider	4
Bilag	0
Task nummer	3 - Sagsnummer

Data fra database

ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
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Data fra database

	ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
145	1...		1	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1

Data fra database

	ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
145	1...		1	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
146	1...		1	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1

Data fra database

	ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
145	1...		1	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
146	1...		1	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
147	1...		1	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1

Data fra database

	ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
145	1...		1	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
146	1...		1	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
147	1...		1	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
148	1...		1	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1

Data fra database

	ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
145	1...		1	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
146	1...		1	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
147	1...		1	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
148	1...		1	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
149	1...		1	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
150	1...		1	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
151	1...		2	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
152	1...		2	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
153	1...		2	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
154	1...		2	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
155	1...		2	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
156	1...		2	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
157	1...		3	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1

Database i forhold til Excel

	ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
145	1...		1	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
146	1...		1	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
147	1...		1	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
148	1...		1	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
149	1...		1	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
150	1...		1	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
151	1...		2	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
152	1...		2	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
153	1...		2	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
154	1...		2	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
155	1...		2	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
156	1...		2	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
157	1...		3	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1

11	Vakuum	Nej	0	Reference indikation (Rå værdi)						DUT indikation (Rå værdi)			
12	Nominel værdi	Arbejdsnormal	Enhed	P _{normal,i1-op}	P _{normal,i2'-ned}	P _{normal,i3-op}	P _{normal,i4'-ned}	P _{normal,i5-op}	P _{normal,i6'-ned}	P _{DUTi1-op}	P _{DUTi2'-ned}	P _{DUTi3-op}	P _{DUTi4'-ned}
13				Se celle C14:C28 for enhed						torr			
14	1,000	AE.01	°	1,000000	1,000000	1,000000	1,000000			1,000000	1,000000	1,000000	1,000000
15	2,000	AE.01	°	2,000000	2,000000	2,000000	2,000000			2,000000	2,000000	2,000000	2,000000
16	3,000	AE.01	°	3,000000	3,000000	3,000000	3,000000			3,000000	3,000000	3,000000	3,000000

Database i forhold til Excel

ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
145	1...	1	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
146	1...	1	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
147	1...	1	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
148	1...	1	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
149	1...	1	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
150	1...	1	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
151	1...	2	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
152	1...	2	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
153	1...	2	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
154	1...	2	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
155	1...	2	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
156	1...	2	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
157	1...	3	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1

11	Vakuum	Nej	0	Reference indikation (Rå værdi)						DUT indikation (Rå værdi)			
12	Nominel værdi	Arbejdsnormal	Enhed	P _{normal,i1-op}	P _{normal,i2'-ned}	P _{normal,i3-op}	P _{normal,i4'-ned}	P _{normal,i5-op}	P _{normal,i6'-ned}	P _{DUTi1-op}	P _{DUTi2'-ned}	P _{DUTi3-op}	P _{DUTi4'-ned}
13				Se celle C14:C28 for enhed						torr			
14	1,000	AE.01	°	1,000000	1,000000	1,000000	1,000000			1,000000	1,000000	1,000000	1,000000
15	2,000	AE.01	°	2,000000	2,000000	2,000000	2,000000			2,000000	2,000000	2,000000	2,000000
16	3,000	AE.01	°	3,000000	3,000000	3,000000	3,000000			3,000000	3,000000	3,000000	3,000000

Database i forhold til Excel

ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
145	1...	1	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
146	1...	1	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
147	1...	1	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
148	1...	1	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
149	1...	1	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
150	1...	1	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
151	1...	2	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
152	1...	2	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
153	1...	2	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
154	1...	2	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
155	1...	2	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
156	1...	2	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
157	1...	3	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1

11	Vakuum	Nej	0	Reference indikation (Rå værdi)						DUT indikation (Rå værdi)			
12	Nominel værdi	Arbejdsnormal	Enhed	P _{normal,i1-op}	P _{normal,i2'-ned}	P _{normal,i3-op}	P _{normal,i4'-ned}	P _{normal,i5-op}	P _{normal,i6'-ned}	P _{DUTi1-op}	P _{DUTi2'-ned}	P _{DUTi3-op}	P _{DUTi4'-ned}
13				Se celle C14:C28 for enhed						torr			
14	1,000	AE.01	°	1,000000	1,000000	1,000000	1,000000			1,000000	1,000000	1,000000	1,000000
15	2,000	AE.01	°	2,000000	2,000000	2,000000	2,000000			2,000000	2,000000	2,000000	2,000000
16	3,000	AE.01	°	3,000000	3,000000	3,000000	3,000000			3,000000	3,000000	3,000000	3,000000

Database i forhold til Excel

ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
145	1...	1	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
146	1...	1	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
147	1...	1	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
148	1...	1	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
149	1...	1	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
150	1...	1	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
151	1...	2	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
152	1...	2	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
153	1...	2	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
154	1...	2	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
155	1...	2	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
156	1...	2	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
157	1...	3	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1

11	Vakuum	Nej	0	Reference indikation (Rå værdi)					DUT indikation (Rå værdi)				
12	Nominel værdi	Arbejdsnormal	Enhed	P _{normal,i1-op}	P _{normal,i2'-ned}	P _{normal,i3-op}	P _{normal,i4'-ned}	P _{normal,i5-op}	P _{normal,i6'-ned}	P _{DUTi1-op}	P _{DUTi2'-ned}	P _{DUTi3-op}	P _{DUTi4'-ned}
13				Se celle C14:C28 for enhed					torr				
14	1,000	AE.01	°	1,000000	1,000000	1,000000	1,000000			1,000000	1,000000	1,000000	1,000000
15	2,000	AE.01	°	2,000000	2,000000	2,000000	2,000000			2,000000	2,000000	2,000000	2,000000
16	3,000	AE.01	°	3,000000	3,000000	3,000000	3,000000			3,000000	3,000000	3,000000	3,000000

Database i forhold til Excel

ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
145	1...	1	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
146	1...	1	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
147	1...	1	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
148	1...	1	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
149	1...	1	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
150	1...	1	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
151	1...	2	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
152	1...	2	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
153	1...	2	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
154	1...	2	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
155	1...	2	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
156	1...	2	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
157	1...	3	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1

11	Vakuum	Nej	0	Reference indikation (Rå værdi)						DUT indikation (Rå værdi)			
12	Nominel værdi	Arbejdsnormal	Enhed	P _{normal,i1-op}	P _{normal,i2'-ned}	P _{normal,i3-op}	P _{normal,i4'-ned}	P _{normal,i5-op}	P _{normal,i6'-ned}	P _{DUTi1-op}	P _{DUTi2'-ned}	P _{DUTi3-op}	P _{DUTi4'-ned}
13				Se celle C14:C28 for enhed						torr			
14	1,000	AE.01	°	1,000000	1,000000	1,000000	1,000000			1,000000	1,000000	1,000000	1,000000
15	2,000	AE.01	°	2,000000	2,000000	2,000000	2,000000			2,000000	2,000000	2,000000	2,000000
16	3,000	AE.01	°	3,000000	3,000000	3,000000	3,000000			3,000000	3,000000	3,000000	3,000000

Data fra database

Table "resultater"

ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
145	1...	1	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
146	1...	1	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
147	1...	1	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
148	1...	1	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
149	1...	1	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
150	1...	1	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
151	1...	2	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
152	1...	2	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
153	1...	2	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
154	1...	2	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
155	1...	2	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
156	1...	2	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
157	1...	3	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1

Table "stamdata"

ID	certifikatnummer	task_number	registreringsudstyr	adresse	dato
1...	1...	???			

Data fra database

Table "resultater"

	ID	direction	measurement_number	rising_or_falling	analytical_value	attempted_value	measured_value	equipment	date	costumer_equipment	task_number	udgangspunkt
145	1...		1	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
146	1...		1	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
147	1...		1	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
148	1...		1	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
149	1...		1	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
150	1...		1	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
151	1...		2	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1
152	1...		2	rising	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
153	1...		2	rising	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
154	1...		2	rising	3,000000	3,000000	3,000000	secret	2023-07-13 10:30:25.000	???	???	1
155	1...		2	falling	2,000000	2,000000	2,000000	secret	2023-07-13 10:30:25.000	???	???	1
156	1...		2	falling	1,000000	1,000000	1,000000	secret	2023-07-13 10:30:25.000	???	???	1
157	1...		3	None	0,000000	0,000000	0,000000	secret	2023-07-13 10:30:25.000	???	???	1

Table "stamdata"

	ID	certifikatnummer	task_number	registreringsudstyr	adresse	dato								
1...	1...	██████████	???		██	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████

Data fra database

Table "resultater"

A screenshot of a table editor window for 'Table "resultater"'. The window has a header bar with a grid icon and a minus sign. Below the header is a list of columns, each with a checkbox on the left. The 'task_number' column is selected, indicated by a checked checkbox. The rest of the columns are obscured by black boxes.

Table "stamdata"

A screenshot of a table editor window for 'Table "stamdata"'. The window has a header bar with a grid icon and a minus sign. Below the header is a list of columns, each with a checkbox on the left. The '* (All Columns)' option is selected, indicated by a checked checkbox. The 'task_number' column is also visible with an unchecked checkbox. The rest of the columns are obscured by black boxes.

Data fra database

Table "resultater"

Table "stamdata"

The image shows two database table windows. The left window, titled "Table 'resultater'", has a red box around the field "sand_værdi" and another around "enhed_sand". The right window, titled "Table 'stamdata'", has a red box around the field "tidsstempel". Blue arrows point from these fields to corresponding XML data blocks on the right side of the slide.

```
GEMIM3 v1.4.1  
27 ~ </dcc:identifications>  
28 <dcc:beginPerformanceDate>1957-08-13</dcc:beginPerformanceDate>  
29 <dcc:endPerformanceDate>1957-08-13</dcc:endPerformanceDate>
```

```
347 ~ <si:realListXMLList>  
348 <si:valueXMLList>949.984 970.444 979.215 990.897 999.671 1011.354 1020  
349 .126 1028.900 1049.358</si:valueXMLList>  
<si:unitXMLList>mbar</si:unitXMLList>
```

database i forhold til Excel

Excel:
mange lokationer
med lidt data



Database:
1 lokation MEGET data



Fordele og ulemper ved database

Fordele

- Automatisk generering af DCCer
- Sikker data i og med at en sikker database er svær at få adgang til
- Nemt at lave maskinelæsning af data
- Datalagringen bliver hurtig og ikke mærkbar for udføreren af kalibreringen
- Bevarelse af historik
- Uafhængig af styresystem
- Mulighed for web-baserede løsninger
- Kan bruges i samarbejde med Excel
- Ubegrænset antal målinger per kalibrering

Ulemper

- Ikke lige så let at lære database som Excel
- Der er brug for en med kendskab til databaser til at rette eventuelle fejl
- Skabe fundament for overførsel af data fra Excel til database-data kan tage lang tid

DCC automation

data

	sand_værdi	enhed_sand
1	0,00000	MN
2	0,19300	MN
3	0,38900	MN
4	0,58900	MN
5	0,78800	MN
6	0,99200	MN
7	0,00000	MN

DCC automation

data

	sand_værdi	enhed_sand
1	0,00000	MN
2	0,19300	MN
3	0,38900	MN
4	0,58900	MN
5	0,78800	MN
6	0,99200	MN
7	0,00000	MN

DCC automation

enhed

MN

Platinum SI-enheder

prefikser

Quantity	Unit name	Symbol	Identifier	Class	Reference	Prefix name ^(a)	Symbol	Multiplier	Identifier	Class	Reference
length	meter	m	\metre	platinum	[1, Table 2]	deca ^(a)	da	10 ¹	\deca	gold	[1, Table 7]
mass	kilogram ^(a)	kg	\kilogram	platinum	[1, Table 2]	hecto ^(a)	h	10 ²	\hecto	gold	[1, Table 7]
time	second	s	\second	platinum	[1, Table 2]	kilo ^(a,b)	k	10 ³	\kilo	gold	[1, Table 7]
current	ampere	A	\ampere	platinum	[1, Table 2]	mega ^(a)	M	10 ⁶	\mega	gold	[1, Table 7]
thermodynamic temperature	kelvin	K	\kelvin	platinum	[1, Table 2]	giga ^(a)	G	10 ⁹	\giga	gold	[1, Table 7]
amount of substance	mole	mol	\mole	platinum	[1, Table 2]	tera ^(a)	T	10 ¹²	\tera	gold	[1, Table 7]
luminous intensity	candela	cd	\candela	platinum	[1, Table 2]	peta ^(a)	P	10 ¹⁵	\peta	gold	[1, Table 7]
						exa ^(a)	E	10 ¹⁸	\exa	gold	[1, Table 7]
						zetta ^(a)	Z	10 ²¹	\zetta	gold	[1, Table 7]
						yotta ^(a)	Y	10 ²⁴	\yotta	gold	[1, Table 7]

DCC automation

enhed

MN

Platinum SI-enheder

prefikser

Quantity	Unit name	Symbol	Identifier	Class	Reference	Prefix name ^(a)	Symbol	Multiplier	Identifier	Class	Reference
length	meter	m	\metre	platinum	[1, Table 2]	deca ^(a)	da	10 ¹	\deca	gold	[1, Table 7]
mass	kilogram ^(a)	kg	\kilogram	platinum	[1, Table 2]	hecto ^(a)	h	10 ²	\hecto	gold	[1, Table 7]
time	second	s	\second	platinum	[1, Table 2]	kilo ^(a,b)	k	10 ³	\kilo	gold	[1, Table 7]
current	ampere	A	\ampere	platinum	[1, Table 2]	mega ^(a)	M	10 ⁶	\mega	gold	[1, Table 7]
thermodynamic temperature	kelvin	K	\kelvin	platinum	[1, Table 2]	giga ^(a)	G	10 ⁹	\giga	gold	[1, Table 7]
amount of substance	mole	mol	\mole	platinum	[1, Table 2]	tera ^(a)	T	10 ¹²	\tera	gold	[1, Table 7]
luminous intensity	candela	cd	\candela	platinum	[1, Table 2]	peta ^(a)	P	10 ¹⁵	\peta	gold	[1, Table 7]
						exa ^(a)	E	10 ¹⁸	\exa	gold	[1, Table 7]
						zetta ^(a)	Z	10 ²¹	\zetta	gold	[1, Table 7]
						yotta ^(a)	Y	10 ²⁴	\yotta	gold	[1, Table 7]

DCC automation

enhed
MN ?

Platinum SI-enheder

prefikser

Quantity	Unit name	Symbol	Identifier	Class	Reference	Prefix name ^(a)	Symbol	Multiplier	Identifier	Class	Reference
length	meter	m	\metre	platinum	[1, Table 2]	deca ^(a)	da	10 ¹	\deca	gold	[1, Table 7]
mass	kilogram ^(a)	kg	\kilogram	platinum	[1, Table 2]	hecto ^(a)	h	10 ²	\hecto	gold	[1, Table 7]
time	second	s	\second	platinum	[1, Table 2]	kilo ^(a,b)	k	10 ³	\kilo	gold	[1, Table 7]
current	ampere	A	\ampere	platinum	[1, Table 2]	mega ^(a)	M	10 ⁶	\mega	gold	[1, Table 7]
thermodynamic temperature	kelvin	K	\kelvin	platinum	[1, Table 2]	giga ^(a)	G	10 ⁹	\giga	gold	[1, Table 7]
amount of substance	mole	mol	\mole	platinum	[1, Table 2]	tera ^(a)	T	10 ¹²	\tera	gold	[1, Table 7]
luminous intensity	candela	cd	\candela	platinum	[1, Table 2]	peta ^(a)	P	10 ¹⁵	\peta	gold	[1, Table 7]
						exa ^(a)	E	10 ¹⁸	\exa	gold	[1, Table 7]
						zetta ^(a)	Z	10 ²¹	\zetta	gold	[1, Table 7]
						yotta ^(a)	Y	10 ²⁴	\yotta	gold	[1, Table 7]

DCC automation

enhed

N

Platinum SI-enheder

prefikser

Quantity	Unit name	Symbol	Identifier	Class	Reference	Prefix name ^(a)	Symbol	Multiplier	Identifier	Class	Reference
length	meter	m	\metre	platinum	[1, Table 2]	deca ^(a)	da	10 ¹	\deca	gold	[1, Table 7]
mass	kilogram ^(a)	kg	\kilogram	platinum	[1, Table 2]	hecto ^(a)	h	10 ²	\hecto	gold	[1, Table 7]
time	second	s	\second	platinum	[1, Table 2]	kilo ^(a,b)	k	10 ³	\kilo	gold	[1, Table 7]
current	ampere	A	\ampere	platinum	[1, Table 2]	mega ^(a)	M	10 ⁶	\mega	gold	[1, Table 7]
thermodynamic temperature	kelvin	K	\kelvin	platinum	[1, Table 2]	giga ^(a)	G	10 ⁹	\giga	gold	[1, Table 7]
amount of substance	mole	mol	\mole	platinum	[1, Table 2]	tera ^(a)	T	10 ¹²	\tera	gold	[1, Table 7]
luminous intensity	candela	cd	\candela	platinum	[1, Table 2]	peta ^(a)	P	10 ¹⁵	\peta	gold	[1, Table 7]
newton	N	\newton	gold	[1, Table 4]	m kg s ⁻²	exa ^(a)	E	10 ¹⁸	\exa	gold	[1, Table 7]
						zetta ^(a)	Z	10 ²¹	\zetta	gold	[1, Table 7]
						yotta ^(a)	Y	10 ²⁴	\yotta	gold	[1, Table 7]

DCC automation

enhed

N

Platinum SI-enheder

prefikser

Quantity	Unit name	Symbol	Identifier	Class	Reference	Prefix name ^(a)	Symbol	Multiplier	Identifier	Class	Reference
length	meter	m	\metre	platinum	[1, Table 2]	deca ^(a)	da	10 ¹	\deca	gold	[1, Table 7]
mass	kilogram ^(a)	kg	\kilogram	platinum	[1, Table 2]	hecto ^(a)	h	10 ²	\hecto	gold	[1, Table 7]
time	second	s	\second	platinum	[1, Table 2]	kilo ^(a,b)	k	10 ³	\kilo	gold	[1, Table 7]
current	ampere	A	\ampere	platinum	[1, Table 2]	mega ^(a)	M	10 ⁶	\mega	gold	[1, Table 7]
thermodynamic temperature	kelvin	K	\kelvin	platinum	[1, Table 2]	giga ^(a)	G	10 ⁹	\giga	gold	[1, Table 7]
amount of substance	mole	mol	\mole	platinum	[1, Table 2]	tera ^(a)	T	10 ¹²	\tera	gold	[1, Table 7]
luminous intensity	candela	cd	\candela	platinum	[1, Table 2]	peta ^(a)	P	10 ¹⁵	\peta	gold	[1, Table 7]
						exa ^(a)	E	10 ¹⁸	\exa	gold	[1, Table 7]
						zetta ^(a)	Z	10 ²¹	\zetta	gold	[1, Table 7]
						yotta ^(a)	Y	10 ²⁴	\yotta	gold	[1, Table 7]
newton	N	\newton	gold	[1, Table 4]	m kg s ⁻²						

DCC automation

enhed
MN

Platinum SI-enheder

prefikser

Quantity	Unit name	Symbol	Identifier	Class	Reference	Prefix name ^(a)	Symbol	Multiplier	Identifier	Class	Reference
length	meter	m	\metre	platinum	[1, Table 2]	deca ^(a)	da	10 ¹	\deca	gold	[1, Table 7]
mass	kilogram ^(a)	kg	\kilogram	platinum	[1, Table 2]	hecto ^(a)	h	10 ²	\hecto	gold	[1, Table 7]
time	second	s	\second	platinum	[1, Table 2]	kilo ^(a,b)	k	10 ³	\kilo	gold	[1, Table 7]
current	ampere	A	\ampere	platinum	[1, Table 2]	mega ^(a)	M	10 ⁶	\mega	gold	[1, Table 7]
thermodynamic temperature	kelvin	K	\kelvin	platinum	[1, Table 2]	giga ^(a)	G	10 ⁹	\giga	gold	[1, Table 7]
amount of substance	mole	mol	\mole	platinum	[1, Table 2]	tera ^(a)	T	10 ¹²	\tera	gold	[1, Table 7]
luminous intensity	candela	cd	\candela	platinum	[1, Table 2]	peta ^(a)	P	10 ¹⁵	\peta	gold	[1, Table 7]
newton	N	\newton	gold	[1, Table 4]	m kg s ⁻²	exa ^(a)	E	10 ¹⁸	\exa	gold	[1, Table 7]
						zetta ^(a)	Z	10 ²¹	\zetta	gold	[1, Table 7]
						yotta ^(a)	Y	10 ²⁴	\yotta	gold	[1, Table 7]

DCC automation

Quantity	Unit name	Symbol	Identifier	Class	Reference
length	meter	m	\metre	platinum	[1, Table 2]
mass	kilogram ^(a)	kg	\kilogram	platinum	[1, Table 2]
time	second	s	\second	platinum	[1, Table 2]
current	ampere	A	\ampere	platinum	[1, Table 2]
thermodynamic temperature	kelvin	K	\kelvin	platinum	[1, Table 2]
amount of substance	mole	mol	\mole	platinum	[1, Table 2]
luminous intensity	candela	cd	\candela	platinum	[1, Table 2]
newton	N	\newton	gold	[1, Table 4]	m kg s ⁻²

DCC automation

Quantity	Unit name	Symbol	Identifier	Class	Reference
length	meter	m	\metre	platinum	[1, Table 2]
mass	kilogram ^(a)	kg	\kilogram	platinum	[1, Table 2]
time	second	s	\second	platinum	[1, Table 2]
current	ampere	A	\ampere	platinum	[1, Table 2]
thermodynamic temperature	kelvin	K	\kelvin	platinum	[1, Table 2]
amount of substance	mole	mol	\mole	platinum	[1, Table 2]
luminous intensity	candela	cd	\candela	platinum	[1, Table 2]
newton	N	\newton	gold	[1, Table 4]	m kg s ⁻²

DCC automation

Quantity	Unit name	Symbol	Identifier	Class	Reference
length	meter	m	\metre	platinum	[1, Table 2]
mass	kilogram ^(a)	kg	\kilogram	platinum	[1, Table 2]
time	second	s	\second	platinum	[1, Table 2]
current	ampere	A	\ampere	platinum	[1, Table 2]
thermodynamic temperature	kelvin	K	\kelvin	platinum	[1, Table 2]
amount of substance	mole	mol	\mole	platinum	[1, Table 2]
luminous intensity	candela	cd	\candela	platinum	[1, Table 2]
newton	N	\newton	gold	[1, Table 4]	m kg s ⁻²

DCC automation

$$s^{-2} = \text{second to the } \{-2\}$$

DCC automation

s^{-2} = \second\tothe{-2}

DCC automation

Data fra database

	sand_værdi	enhed_sand
1	0,00000	MN
2	0,19300	MN
3	0,38900	MN
4	0,58900	MN
5	0,78800	MN
6	0,99200	MN
7	0,00000	MN

- PTB Platinum enhed

\second	platinum
---------	----------

\kilogram	platinum
-----------	----------

\metre	platinum
--------	----------

- Kundeønsket enhed

\mega	gold
-------	------

\newton	gold
---------	------

DCC automation

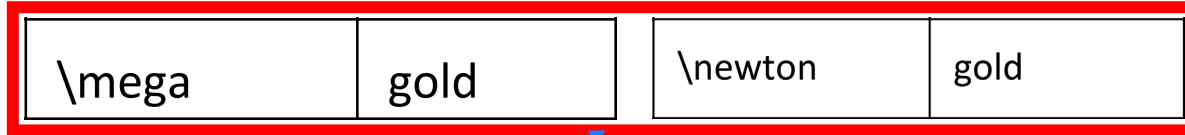
Data fra database

	sand_værdi	enhed_sand
1	0,00000	MN
2	0,19300	MN
3	0,38900	MN
4	0,58900	MN
5	0,78800	MN
6	0,99200	MN
7	0,00000	MN

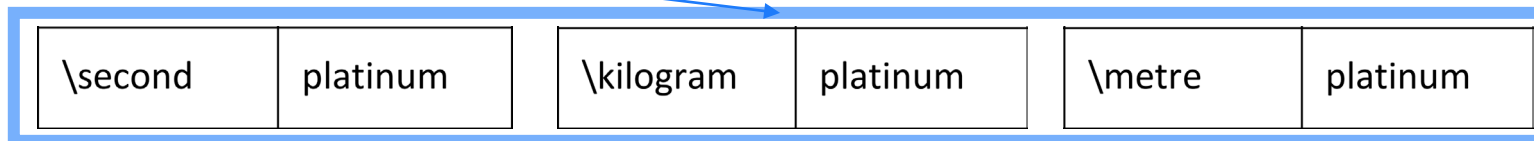
Transform
unit

```
√ 'sand_værdi': defaultdict(<class 'dict'>, {'MN': {'\\mega\\newton': ['0.00000', '0.19300', '0.38900', '0.58900', '0.78800', '0.99200', '0.00000']}})
> special variables
> function variables
> class variables
√ 'MN': {'\\mega\\newton': ['0.00000', '0.19300', '0.38900', '0.58900', '0.78800', '0.99200', '0.00000']}
> special variables
> function variables
> '\\mega\\newton': ['0.00000', '0.19300', '0.38900', '0.58900', '0.78800', '0.99200', '0.00000']
> '\\metre\\kilogram\\second\\tothe{-2}': ['0', '193000', '389000', '589000', '788000', '992000', '0']
```

DCC automation



```
✓ 'sand_værdi': defaultdict(<class 'dict'>, {'MN': {'\\mega\\newton': ['0.00000', '0.19300', '0.38900', '0.58900', '0.78800', '0.99200', '0.00000']}})
> special variables
> function variables
> class variables
✓ 'MN': {'\\mega\\newton': ['0.00000', '0.19300', '0.38900', '0.58900', '0.78800', '0.99200', '0.00000']}
> special variables
> function variables
> '\\mega\\newton': ['0.00000', '0.19300', '0.38900', '0.58900', '0.78800', '0.99200', '0.00000']
> '\\metre\\kilogram\\second\\tothe{-2}': ['0', '193000', '389000', '589000', '788000', '992000', '0']
```



DCC automation

Databasedata

	sand_værdi	enhed_sand
1	0,00000	MN
2	0,19300	MN
3	0,38900	MN
4	0,58900	MN
5	0,78800	MN
6	0,99200	MN
7	0,00000	MN

DCC-visning af data

```
▼<dcc:quantity refType="basic_referenceValue">
  ▼<dcc:name>
    <dcc:content lang="en">basic_referenceValue</dcc:content>
  </dcc:name>
  ▼<si:hybrid>
    ▼<si:realListXMLList>
      <si:valueXMLList>0 193000 389000 589000 788000 992000 0</si:valueXMLList>
      <si:unitXMLList>\metre\kilogram\second\tothe{-2}</si:unitXMLList>
    </si:realListXMLList>
    ▼<si:realListXMLList>
      <si:valueXMLList>0.00000 0.19300 0.38900 0.58900 0.78800 0.99200 0.00000</si:valueXMLList>
      <si:unitXMLList>\mega\newton</si:unitXMLList>
    </si:realListXMLList>
  </si:hybrid>
</dcc:quantity>
```



DCC automation

Alle fundne certifikatnumre

```
1338: '12' 13.23'  
1339: '12' 39.01'  
1340: '12' 41.01'  
1341: '9'  
1342: '9'  
1343: '9'  
1344: '9'  
1345: '9'  
1346: '9'  
1347: '9'  
1348: '9'  
1349: '12' 33.29'  
1350: '9'  
1351: '12' 26.01'  
1352: '9'  
1353: '12' 28.01'  
1354: '12' 01.01'  
1355: '9'  
len(): 1356
```

DCC automation

Alle fundne certifikatnumre

```
1338: '12' 13.23'  
1339: '12' 39.01'  
1340: '12' 41.01'  
1341: '9' 33.29'  
1342: '9' 26.01'  
1343: '9' 28.01'  
1344: '9' 01.01'  
1345: '9' 33.29'  
1346: '9' 26.01'  
1347: '9' 28.01'  
1348: '9' 01.01'  
1349: '12' 33.29'  
1350: '9' 26.01'  
1351: '12' 26.01'  
1352: '9' 28.01'  
1353: '12' 28.01'  
1354: '12' 01.01'  
1355: '9' 33.29'  
len(): 1356
```

kode til at lave DCC ved at kende certifikatnummer

```
13 from make_xml import write_DCC  
14  
15 want = ""  
16  
17 table = 'HEMMELIGT_TABLE_NAVN'  
18  
19 certifikatnummer = 'HEMMELIGT_CERTIFIKATNUMMER'  
20  
21 requirements_head = ['certifikatnummer']  
22  
23 requirements_foot = [f"{{certifikatnummer}}"]  
24  
25 name = f"DCC_{{requirements_head[0]}}_{{requirements_foot[0]}}.xml"  
26  
27 write_DCC(want, table, requirements_head, requirements_foot, name, certifikatnummer)
```

DCC automation

Alle fundne certifikatnumre

```
1338: '12' 13.23'  
1339: '12' 39.01'  
1340: '12' 41.01'  
1341: '9'  
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1351: '12' 26.01'  
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22  
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24  
25 name = f"DCC_{{requirements_head[0]}}_{{requirements_foot[0]}}.xml"  
26  
27 write_DCC(want, table, requirements_head, requirements_foot, name, certifikatnummer)
```

```
100% | 1450/1450 [04:18<00:00, 5.60it/s]
```

DCC automation

Alle fundne certifikatnumre

```
1338: '12' 13.23'  
1339: '12' 39.01'  
1340: '12' 41.01'  
1341: '9'  
1342: '9'  
1343: '9'  
1344: '9'  
1345: '9'  
1346: '9'  
1347: '9'  
1348: '9'  
1349: '12' 33.29'  
1350: '9'  
1351: '12' 26.01'  
1352: '9'  
1353: '12' 28.01'  
1354: '12' 01.01'  
1355: '9'  
len(): 1356
```

kode til at lave DCC ved at kende certifikatnummer

```
13 from make_xml import write_DCC  
14  
15 want = ""  
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17 table = 'HEMMELIGT_TABLE_NAVN'  
18  
19 certifikatnummer = 'HEMMELIGT_CERTIFIKATNUMMER'  
20  
21 requirements_head = ['certifikatnummer']  
22  
23 requirements_foot = [f"{{certifikatnummer}}"]  
24  
25 name = f"DCC_{{requirements_head[0]}}_{{requirements_foot[0]}}.xml"  
26  
27 write_DCC(want, table, requirements_head, requirements_foot, name, certifikatnummer)
```

```
100% | 1450/1450 [04:18:00:00, 5.60it/s]
```

4 minutter og 18 sekunder om at lave 1450 test-DCCer

Status i dag

- Mangler på database

Der er stadig data der skal med i DCCen der ikke er med.

Databasen skal have målinger og ikke kun resultater fra certifikatet.

- Mangler på pythonkode

En DCC-skabelonen skal indenfor samtlige kalibreringstyper

- Vi mangler et accepteret format på en DCC fra PTB

- Planer for webbaseret løsning til opsamling af certifikater og DCCer



Spørgsmål ?