



Migrating data modules to new versions of S1000D

14 June 2017



Index

Migrating data modules to new versions of S1000D

- 1) Scenario description
 - 1) Problem
 - 2) Solutions
- 2) Example: S1000D v1.7, CTG 2.2 ⇒ S1000D v4.1
- 3) Conversion problems
- 4) Conclusion

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Project Meeting

Do we have to update our production environment?

I need training for this new environment!

Do we need to migrate everything?

How to continue delivering documentation during migration phase?

We have a new Client he wants our documentation in S1000D 4.2

How much does it cost?

3

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Migration ideas

1) Freeze all + One shot

No updates during freeze

2) Iterative migration

Adaptation + new writing rules

Convert

Output Norm

Error Log

New revision

Convert

Output Norm

Error Log

New revision

Convert

Output Norm

New revision

Output Norm

4

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Example:

S1000D v1.7 - CTG 2.2 ⇨ S1000D v4.1


5

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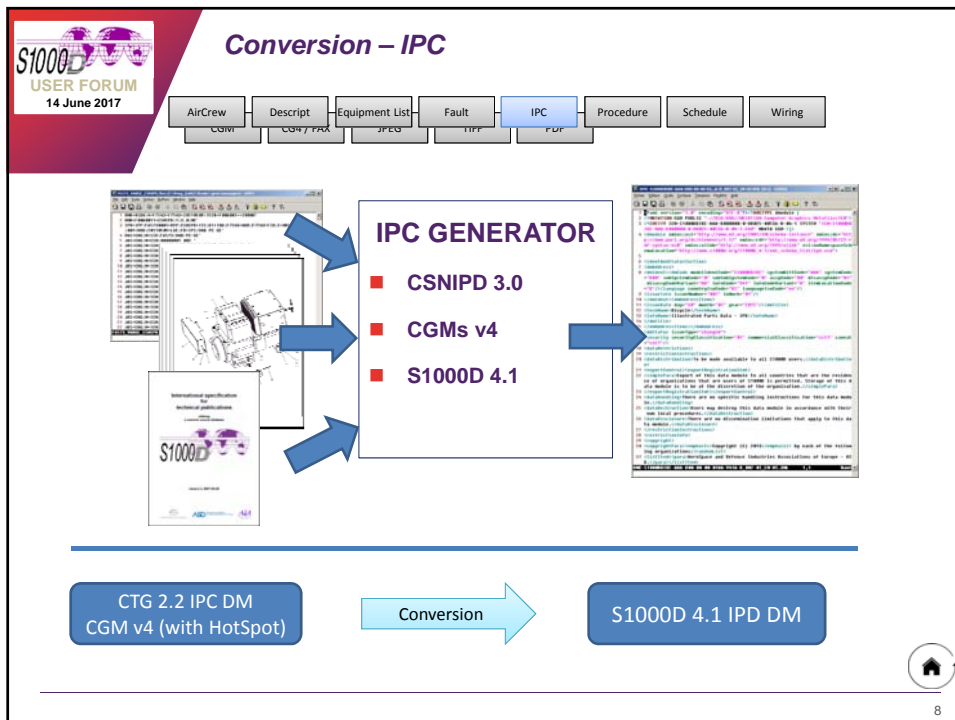
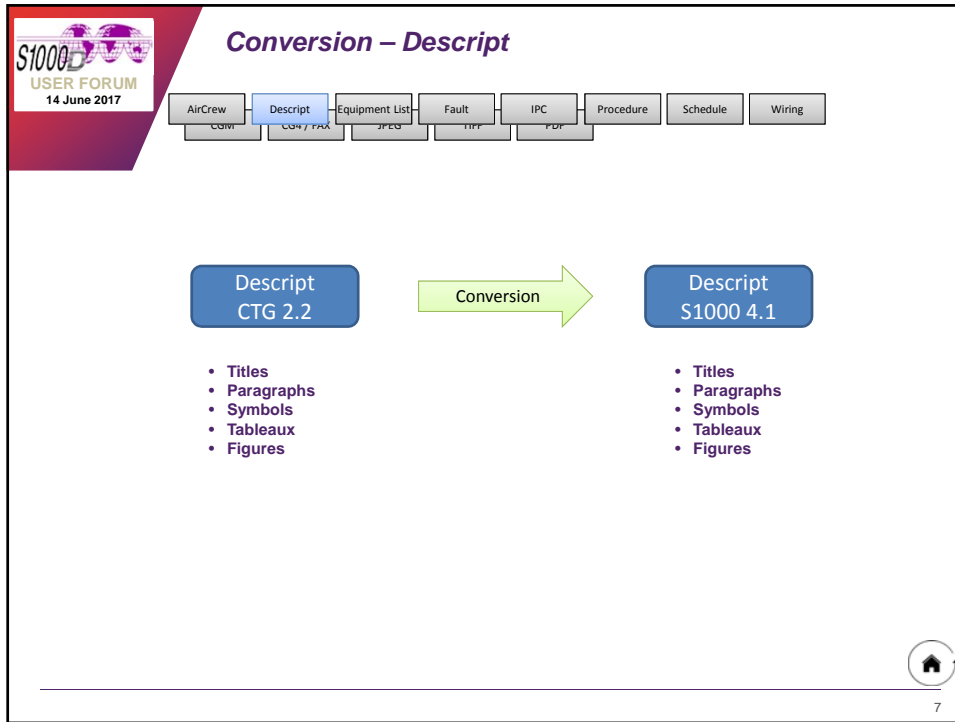
Estimated Workload

Format	Number of ICN (estimation)
CGM (v1)	4000
CG4 /FAX	0
JPEG	800
PDF	0
TIFF	500

DTD	Number of DM (estimation)
AirCrew	0
Description	400
Equipment List	0
Fault	0
IPC	400
Procedure	3200
Schedule	0
Wiring	0



6




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Conversion – Procedure

AirCrew | Descript | Equipment List | Fault | IPC | Procedure | Schedule | Wiring

CGW | CG4/PRA | JPEG | TIF | PDF

Proced CTG 2.2 → Conversion → Proced S1000D 4.1

 **Potential problems when converting automatically!**
Example: <closeup> in Rafale uses Steps and not Required conditions

9

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Conversion – Data Modules

AirCrew | Descript | Equipment List | Fault | IPC | Procedure | Schedule | Wiring

CGW | CG4/PRA | JPEG | TIF | PDF

Descript CTG 2.2 → Conversion → Descript S1000 4.1

IPC CTG 2.2 → S2000M or Conv. → IPD S1000D 4.1

Proced CTG 2.2 → Conversion → Proced S1000D 4.1

10

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Conversion – CGM

AirCom... Document... Equipment List... Fault... IPC... Procedure... Schedule... Wiring

CGM CG4 / FAX JPEG TIFF PDF

CGM v1 → Conversion → CGM v4

Add HotSpots to the CGM v4

Selection of the profile for the Rafale project :

ATA GrExchange 2.6
or
S1000D v4.1

11

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Conversion – JPEG

AirCom... Document... Equipment List... Fault... IPC... Procedure... Schedule... Wiring

CGM CG4 / FAX JPEG TIFF PDF

JPEG → Copy → JPEG

12

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Conversion – TIFF

AirCom... Document... Equipment List... Fault... IPC... Procedure Schedule Wiring

CGM CG4 / FAX JPEG **TIFF** PDF

TIFF → Conversion → PNG

Use a Web Browser compatible format



13

Detailed description: This slide is titled 'Conversion – TIFF'. It features a navigation bar at the top with buttons for 'AirCom...', 'Document...', 'Equipment List...', 'Fault...', 'IPC...', 'Procedure', 'Schedule', and 'Wiring'. Below this, a row of format buttons includes 'CGM', 'CG4 / FAX', 'JPEG', 'TIFF' (highlighted in blue), and 'PDF'. The main content area shows a flow from a blue 'TIFF' button to a light blue arrow labeled 'Conversion', which points to a blue 'PNG' button. Below this flow, the text 'Use a Web Browser compatible format' is displayed. In the bottom right corner, there is a home icon and the number '13'.

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Conversion – Graphics


AirCom... Document... Equipment List... Fault... IPC... Procedure Schedule Wiring

CGM CG4 / FAX JPEG **TIFF** PDF

CGM v1 → Conversion + HS → CGM v4

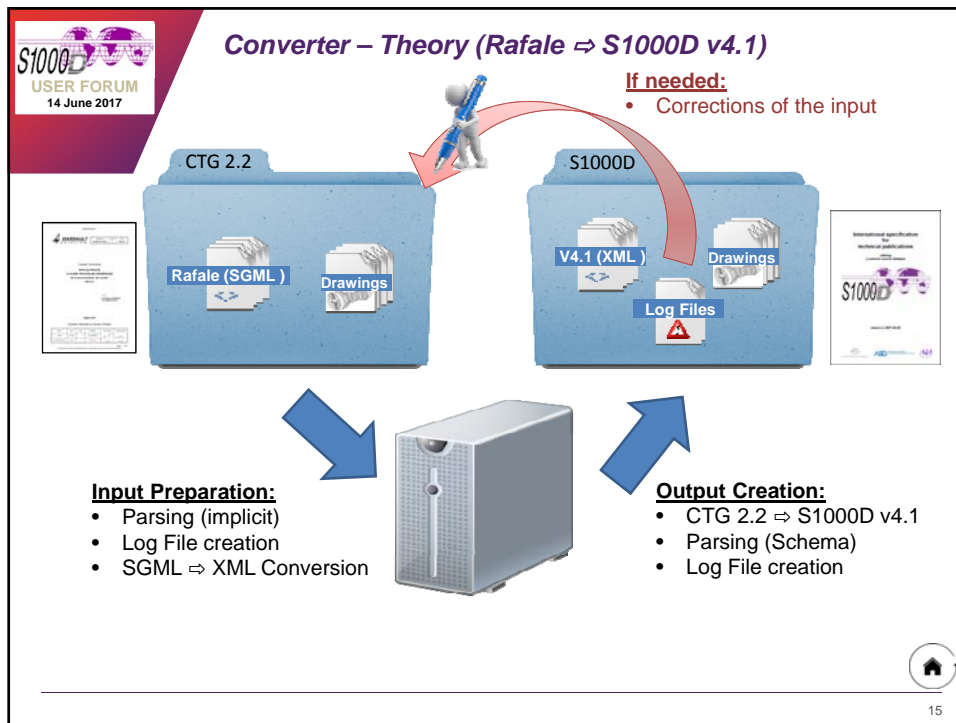
JPEG → Copy → JPEG

TIFF → Conversion → PNG



14

Detailed description: This slide is titled 'Conversion – Graphics'. It features the same navigation bar as the previous slide. Below it, a row of format buttons includes 'CGM', 'CG4 / FAX', 'JPEG', 'TIFF' (highlighted in blue), and 'PDF'. The main content area shows three conversion paths: 1) A blue 'CGM v1' button to a light green arrow labeled 'Conversion + HS', which points to a blue 'CGM v4' button. 2) A blue 'JPEG' button to a light green arrow labeled 'Copy', which points to a blue 'JPEG' button. 3) A blue 'TIFF' button to a light blue arrow labeled 'Conversion', which points to a blue 'PNG' button. In the bottom right corner, there is a home icon and the number '14'.



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Conversion problems

16

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Conversion problems (Example: ICN size)

ICN CTG 2.2

ICN - YY - Y - YYYYYY - Y - YYYYY - NNNNN - A - XX X

Prefix
Model identification code
System difference code
Standard numbering system
Responsible partner company code
Originator code (NCAE code)
Sequential number
Variant code
Issue number
Security classification

Security classification 1 => 2 digits

Issue number 2 => 3 digits

ICN S1000D v4.1

Prefix
Model identification code
System difference code
Standard numbering system code
Responsible partner company code
Originator code (CAGE code)
Unique identifier
Variant code
Issue number
Security classification

17

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Conversion problems (Example: security level)

```

<dmodule><idstatus><dnadres><dnc>
<avee><modelic>A1</modelic>
<sd>A</sd><chapnum>99</chapnum>
<section>3</section><subsect>3</subsect>
<subject>00</subject>
<discod>00</discod>
<discodev>A</discodev>
<incod>720</incod><incodev>A</incodev>
<itemloc>A</itemloc></avee></dnc>
<dmtitle><techname>Lance-Paillettes</techname>
<infoname>Pose</infoname></dmtitle>
<issno issno="08" type="d">
<issdate year="2009" month="12" day="07"></dnadres>
<status><security class="NP">
<rpc rpcname="H">
<orig>F0555</orig>
<applic><systemid><std>
<standard>F2</standard>
<standard>F3</standard></std>
<nti nti="1"></systemid></applic>
<techstd><tpbase>Etat 2.2</tpbase></techstd>
<qa><context></qa>
<rfu>Evolution des applicabilités des versions</rfu>
<remarks>RAS</remarks>
    
```

Security level of the DM is marked as "NP"

```

<icns>
<icn id="F1681"><icn-c>
<modelic>A1</modelic>
<sd>A</sd>
<chapnum>99</chapnum>
<section>3</section>
<subsect>3</subsect>
<subject>00</subject>
<rpc rpcname="H">
<orig>F0555</orig>
<illnum>00004</illnum>
<illver>A</illver>
<illupdat>01</illupdat>
<secr class="2"></icn-c>
</icns>
    
```

Security level of the ICN called is marked as "2" (= "DR")

The DM must be reclassified!

18

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Conversion problems (Example: Figref)

Allowed in CTG 2.2

```
<Elem><Elem id="FIGREF"><Elem><ModelID>M1</ModelID>  
<Code>R</Code>  
<Chapnum>19</Chapnum>  
<SectionID>2</SectionID>  
<Subsect>2</Subsect>  
<Subject>19</Subject><Type>FIGREF</Type>  
<Orig>FIGREF</Orig>  
<Illuano>00001</Illuano>  
<IlluSeq>1</IlluSeq>  
<IlluDat>M1</IlluDat>  
<Secur class="P">  
</Elem>  
</Elem>  
</Elem>  
</Elem>  
</Elem>  
<Content>  
<para><p>Reculer la vis rotule <figure refid="FIGREF" repunct="1"></p></para>  
</Content>  
</Elem>  
</Elem>  
</Elem>  
</Elem>  
</Elem>  
</Elem>  
</Elem>  
</Elem>
```

In S1000D v4.1

```
<module dmodule [ ... ]  
<ENTITY ID="ICH-A-99999-D-XXXX-0001-A-001-02"  
SYSTEM "ICH-A-99999-D-XXXX-0001-A-001-02.cgm" DATA cgm  
[ ... ]  
</Entity>  
<Content>  
<para>Reculer la vis rotule <InternalRef InternalRefId="FIG-A-99999-D-XXXX-0001-A-001-02"  
InternalRefTargetType="Entity" xlink:href="#ICH-A-99999-D-XXXX-0001-A-001-02"  
<rep.ubseq;1</InternalRef></para>  
</Content>  
</Entity>  
</Entity>  
</Entity>  
</Entity>
```

19

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Conversion problems (Example: duration/perstime)

```
<DURATION value="0,1">  
<taskDuration startupDuration="" procedureDuration="6" closeupDuration="" unitOfMeasure="min" />
```

Rafale (1/10 h)	S1000D v4.1 (min)
0,1	6
0,2	12
0,3	18
0,4	24
0,5	30
0,6	36
0,7	42
0,8	48
0,9	54
1,0	60

```
<PERSTIME value="0,1">  
<estimatedTime unitOfMeasure="min">6</estimatedTime>
```

20



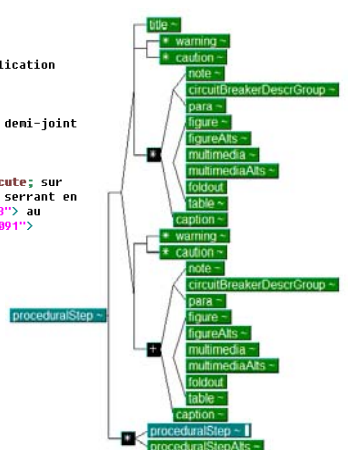
Conversion problems (Example: proceduralStep)


Allowed in CTG 2.2

```


<STEP1><SPECPARA><CAUTION><P>Le d&eacute;lai maximal entre l'application
du mastic sur les 4 vis et leur fixation est de 15 minutes.</P>
</CAUTION>
</SPECPARA>
</STEP1>
<STEP2><PARA><P>Appliquer du mastic sur les 4 vis de fixation du demi-joint
d'&eacute;chappement; <MISCREF REFID="MIS200">.</P>
</PARA>
</STEP2>
<STEP3><PARA><P>Fixer le demi-joint d'&eacute;chappement; sur
la t&eacute;te de balayage<FIGREF REFID="FIG002" REPHOHOT="2"> en serrant en
quinconce les 4 vis au couple de 0,4 Nm <SUPPLREF REFID="SPARE113"> au
moyen d'un tournevis dynamom&eacute;trique <SUPEQREF REFID="TOOL091">
<SUPEQREF REFID="TOOL211"><SUPEQREF REFID="TOOL417">.</P>
</PARA>
</STEP3>
        
```

In S1000D v4.1





21



Conversion problems (Example: tpubref in reqcond)

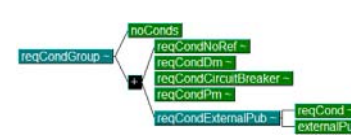
Allowed in CTG 2.2


```

<REQCOND1>
<REQCOND>
<COND>
<PARA>
<P>Le test statique doit &eacute;tre pr&eacute;valid&eacute; au banc d'essai
sur base<TPUBREF XREFID="A009401001">.</P>
</PARA>
</REQCOND>
</REQCOND1>
<REQCOND2>
<COND>
<PARA>
<P>Le test statique doit &eacute;tre pr&eacute;valid&eacute; au banc d'essai
sur PN <TPUBREF XREFID="A009400001">.</P>
</PARA>
</REQCOND2>
</REQCOND1>
        
```


Reference in the middle of a <P>

In S1000D v4.1






Are we allowed to convert it automatically?



22



Conversion problems (Example: refipc in reqcond)

Allowed in CTG 2.2

```


<REQCONDS>
<REQCONDLI>
<REQCOND>
<COND>
<PARA>
<P>Le carburant pr<REFIPC CSN="72016002 239 "/>.</P>
</PARA>
</REQCOND>
</REQCONDLI>
</REQCONDS>
                
```

Reference to the IPC in the middle of a <P>


In S1000D v4.1

```


reqCondGroup --
├── noConds
├── reqCondNoRef --
├── reqCondDm --
├── reqCondCircuitBreaker --
├── reqCond?m --
├── reqCondExternalPub --
├── reqCond --
├── dmRef --
└──
                
```



There are no REFIPC in S1000D v4.1. What to do specially in REQCOND?



23



Conversion problems (Example: DTD UD GIAT)

All tag names are given in French

```

<operprincipal>
<operation id="OPE00000042">
  <applicont/>
  <title>
    <p>Abaissement et Réhausse du véhicule</p>
  </title>
  <prereqs>
    <condreq>
      <outilstdli><aucun/></outilstdli>
      <outilcomppli><aucun/></outilcomppli>
      <outilspecifli><aucun/></outilspecifli>
      <ingredientli><aucun/></ingredientli>
      <consoli><aucun/></consoli>
      <rechangelli><aucun/></rechangelli>
      <duree operation="0.2" cumuli="0" tri="0"/>
      <environnement condition="sans"/>
      <masse>0,1<nbsp>kg</masse>
    </condreq>
    <persreq>
      <personne clair="Mécanicien" id="OPE00000042_HECANIC" nbre="1"/>
    </persreq>
  </prereqs>
  <tache1>
    <applicont></applicont>
    <nota><para><p>En cas de problème contacter le fournisseur.</p></para></nota>
  </tache1>
                
```

reqSupportEquips


reqSupplies

reqSpares

taskDuration

reqPersons

What to do here?




24



Conclusion

25



Iterative conversion - Conclusion

- **No freezes in documentation process:** old norm data can be delivered to your customer at all time.
- **No hard dead line:** you decide when to switch from the old norm to the new one.
- **Save money:** if your program does not need new features you can remain in the old norm, keep your tools, avoid training people, deliver converted DMs.
- **Possibility to “play”** with new features like CIR, Containers, etc.

26



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Thank you for your patience!

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Slides available at:
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28