Airbus Service Bulletins in S1000D

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Organization: Airbus S.A.S.
What are Airbus Service Bulletins?

Limitations of the ATA Service Bulletin DTD

Airbus Service Bulletins in S1000D
What are Airbus Service Bulletins?

Limitations of the ATA Service Bulletin DTD

Airbus Service Bulletins in S1000D
What are Airbus Service Bulletins?

A **Service Bulletin (SB)** is an **Airworthiness approved document** created by the aircraft manufacturer to implement a **change to the type design** of, or an **inspection** to a delivered aircraft - either to **maintain its level of safety**, or to **improve its operation**.

**INSTRUCTION** + **MATERIAL** → **MAINTENANCE**

SB Content

Kits / Tools
What are Airbus Service Bulletins?

**SB Objectives:**

→ provide sufficient information on the modification/inspection to help the airline taking the decision of carrying out or not the SB

→ detail the sequence of all the tasks and material required to accomplish the whole modification or inspection on the aircraft
What are Airbus Service Bulletins?

Limitations of the ATA Service Bulletin DTD

Airbus Service Bulletins in S1000D
Current Process

SB Authoring
(rich semantic tagging)

Airbus DTD

AirN@v / Engineering

ATA DTD

Conversion

• Deliver civil aviation standard compliant data
• Major limitations of ATA SB DTD
ATA Service Bulletin DTD

- SB DTD was one of the first ATA DTDs
- High level structure agreed
- Some semantic tagging inside PARA
- Major limitations
  - No semantic tables structures (only CALS table model)
    \[\rightarrow\] Material Information only in CALS tables
  - Descriptive text in Accomplishment Instructions (no procedure/task model)
  - No metadata for Planning Information
  - Very limited EFFECT model (no PRE/POST, no AND/OR, no other cond)
  - …

\[\rightarrow\] Richness of Airbus authoring DTD lost
What are Airbus Service Bulletins?

Limitations of the ATA Service Bulletin DTD

Airbus Service Bulletins in S1000D
The S1000D Service Bulletin Data Module Structure

Not used by Airbus

- Keep maximum of information in SB DM
- Required structure is available in SB DM schema
Task Set used by Airbus

- A Task Set encompasses a set of SB procedures that, once accomplished, allow the aircraft to be released
- Accomplishment Instructions structure in SB Schema insufficient to support Task Set
The S1000D Service Bulletin Data Module

Task used by Airbus

Accomplishment Instructions structure in SB schema insufficient

- No preliminary requirements (incl. list of Tools, consumables, parts, material set, accesses, references)
- SB Task model equivalent to maintenance procedure ➔ IT tools commonality
Airbus Implementation of SBs in S1000D

- **Use of descript DM**
- **Referenced from any SB DM of the data package**

Management information containing SB metadata to be used for searches (i.e. SB compliance, time assessment, SB impact on weight & balance...).

- **Use of container DM**
- **Avoids changing references**

- **Unique graphics**
- **Referenced from SB core DM or ask DMs**

- **ACT**: List of A/C attribute
- **CCT**: List of conditions
- **PCT**: List of A/C and conditions (Applicability of the SB)

- **As many Task Set solutions as SB embodiment methods**
- **As many Task solutions as A/C configurations**

S1000D Service Bulletin

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SB Delivery Package Structure for an SB Revision

- **Root Folder**
  - DATA
  - PDF
  - SCHEMA
  - USERGUIDE
  - DDN file
  - CSL file

One envelope delivery package

As many delivery packages as A/C configurations (fully filtered)

XML delivery

PDF delivery
S1000D applicability model allows management of multiple applicability formats.

Both PDF and HTML views based on S1000D XML data.
Structured Material Information

Structured material set (i.e. kits)

<table>
<thead>
<tr>
<th>Kit tool 54P001T01R00</th>
<th>Cost</th>
<th>1664.00 USD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Availability</td>
<td>090 d (calendar days from receipt of order)</td>
</tr>
</tbody>
</table>

Procurement address

<table>
<thead>
<tr>
<th>NOTE(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers with aircraft shown in the effectivity of this Service Bulletin should send a purchase order to AIRBUS. Quote the number of this Service Bulletin. The address is:</td>
</tr>
<tr>
<td>AIRBUS</td>
</tr>
<tr>
<td>Material, Logistics and Suppliers</td>
</tr>
<tr>
<td>Weg beim Jaeger 150</td>
</tr>
<tr>
<td>D-22335</td>
</tr>
<tr>
<td>HAMBURG</td>
</tr>
<tr>
<td>GERMANY</td>
</tr>
<tr>
<td>+49 40 50 76 2590</td>
</tr>
<tr>
<td><a href="mailto:airbus.kit@airbus.com">airbus.kit@airbus.com</a></td>
</tr>
<tr>
<td><a href="http://spares.airbus.com">http://spares.airbus.com</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART No.</th>
<th>QTY (UM)</th>
<th>KEYWORD</th>
<th>DRAWING</th>
<th>SEE NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>98F53103004000</td>
<td>1</td>
<td>ACTUATOR</td>
<td></td>
<td></td>
<td>(1)</td>
</tr>
</tbody>
</table>

NOTE(S)

(1): Note for the Matsset: STOOL

Structured list of material sets necessary for each aircraft
Structured Material Information

### Consumables for task set A350-A-54-XX-P001-01000-93AA-A Taskset 001

<table>
<thead>
<tr>
<th>ITEM</th>
<th>REFERENCE CML</th>
<th>DESCRIPTION</th>
<th>DRAWING</th>
<th>SEE NOTES</th>
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<tbody>
<tr>
<td>01ABB1</td>
<td>Turbo Engine Fuel High flash point -</td>
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<td>(1)</td>
<td></td>
</tr>
<tr>
<td>08BAA9</td>
<td>General - -</td>
<td></td>
<td>(1)</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE(S)**

(1): Note for the Matset: CML

### MATERIAL

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>QTY</th>
<th>SEE NOTES</th>
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<tbody>
<tr>
<td>Kit tool 54P001T01R00</td>
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<td></td>
</tr>
<tr>
<td>Aircraft standard tools</td>
<td></td>
<td></td>
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<tr>
<td>Consumables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kit 54P001A02R01</td>
<td>1</td>
<td>Assembly part ASNA2050DCJ2412</td>
</tr>
<tr>
<td>Components</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interchangeable parts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spare parts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Referenced parts</td>
<td></td>
<td></td>
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</table>
## Structured Material Information

### Kit 54P001A02R01

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART No.</th>
<th>QU</th>
<th>KEY WORD</th>
<th>DRAWING</th>
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<tbody>
<tr>
<td>Work package 21-23</td>
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<td></td>
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<tr>
<td>13</td>
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<td>SHEET</td>
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</tr>
<tr>
<td>12</td>
<td>ASNA2050DCJ012</td>
<td>3</td>
<td>RIVET</td>
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<td>(1)</td>
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<td>Work package 21-24</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>14</td>
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<td>CONNECTR</td>
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<td>1</td>
<td>WEB</td>
<td></td>
<td>(1)</td>
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<tr>
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<td>WEB</td>
<td></td>
<td>(1)</td>
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<tr>
<td>Work package 21-25</td>
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<td></td>
<td></td>
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<tr>
<td>17</td>
<td>8853103004000</td>
<td>1</td>
<td>ACTUATOR</td>
<td></td>
<td>(1) (2)</td>
</tr>
</tbody>
</table>

**NOTE(S)**

Refer to the AIRBUS Ref. SM if you find part numbers of hardware components in the related kit(s) which you cannot identify in the LIST OF COMPONENTS of this Service Bulletin. The SM will give you the correct part number to part number relationship.

(1): Note for the Matset: KIT
(2): Note for the Matset: SKIT

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Structured individual materials (tool, consumable part)
Structured Material Information

A. MATERIAL APPLICABILITY

ON A/C 0025
ON CONF 001

Material for task set A350-A-54-XX-P001:

Interchangeable parts for task set A350-A-54-XX-P001-01000-93AA-A Taskset 001

<table>
<thead>
<tr>
<th>KEYWORD</th>
<th>OLD PART No.</th>
<th>NEW PART No.</th>
<th>INT</th>
<th>SEE NOTES</th>
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<tbody>
<tr>
<td>SOFTWARE-ETRAC</td>
<td>620-080-583-0</td>
<td>E0163D01-10X</td>
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</tbody>
</table>

NOTE(S)

For definitions of interchangeability codes in column INT. refer to ATA Common Support Data Dictionary (CSDD), Chapter 2.

Only the mixability configuration(s) and condition(s) stated in this Service Bulletin are approved.

Import into airline information system easily possible
Ready-to-use Accomplishment Instructions

SB task set enables breakdown of accomplishment instructions

SB procedure (=task) broken down into single Data Modules ready to be used in Engineering Orders or Job Cards (including associated illustrations)
Ready-to-use Accomplishment Instructions

SB TASK SET 1

Procedure DM 1

Procedure DM 2

Procedure DM 3

Commonality of SB procedure structure with maintenance procedures
Roadmap towards S1000D Service Bulletins

Single SB standard for all Airbus Aircraft programmes

- SBs authored with ATA tool set migrated to S1000D
- A350 Entry Into Service
- A350 SB production with S1000D tool set
- Production of new SBs for all programs with S1000D tool set
- All SB revisions in S1000D
Conclusion

XML instead of SGML

Compliant with S1000D 4.2 implementation for A350 XWB maintenance documentation

Fully configurable SB

Rich semantic tagging kept

S1000D compliant SB XML data allows implementing enhanced data processing functionality