



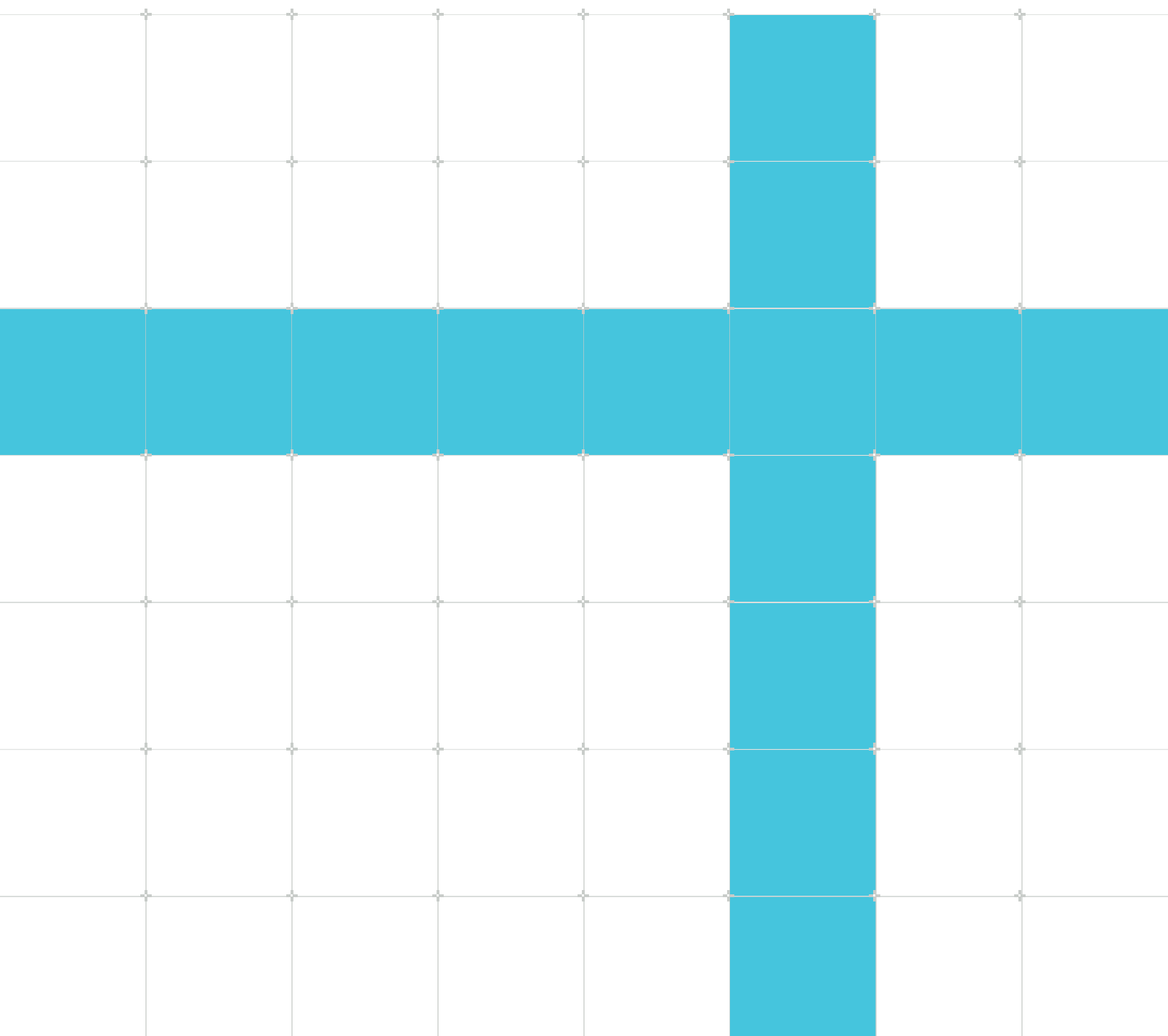
# Arm<sup>®</sup> Architecture Reference Manual Supplement, Armv9-A

## Known issues in Issue B.a

**Non-Confidential**

**Issue 00**

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## Arm® Architecture Reference Manual Supplement, Armv9-A

### Known issues in Issue B.a

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## Release information

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# 1 Introduction

## 1.1 Conventions

The following subsections describe conventions used in Arm documents.




### Glossary




The Arm Glossary is a list of terms used in Arm documentation, together with definitions for those terms. The Arm Glossary does not contain terms that are industry standard unless the Arm meaning differs from the generally accepted meaning.

See the Arm® Glossary for more information: [developer.arm.com/glossary](https://developer.arm.com/glossary).

### Typographic conventions

Arm documentation uses typographical conventions to convey specific meaning.

Convention	Use
<i>italic</i>	Citations.
<b>bold</b>	Interface elements, such as menu names.  Signal names.  Terms in descriptive lists, where appropriate.
monospace	Text that you can enter at the keyboard, such as commands, file and program names, and source code.
<b>monospace bold</b>	Language keywords when used outside example code.
monospace <u>underline</u>	A permitted abbreviation for a command or option. You can enter the underlined text instead of the full command or option name.
<and>	Encloses replaceable terms for assembler syntax where they appear in code or code fragments.  For example:  <pre>MRC p15, 0, &lt;Rd&gt;, &lt;CRn&gt;, &lt;CRm&gt;, &lt;Opcode_2&gt;</pre>
<b>SMALL CAPITALS</b>	Terms that have specific technical meanings as defined in the <i>Arm® Glossary</i> . For example, <b>IMPLEMENTATION DEFINED</b> , <b>IMPLEMENTATION SPECIFIC</b> , <b>UNKNOWN</b> , and <b>UNPREDICTABLE</b> .
 Caution	Recommendations. Not following these recommendations might lead to system failure or damage.
 Warning	Requirements for the system. Not following these requirements might result in system failure or damage.
 Danger	Requirements for the system. Not following these requirements will result in system failure or damage.

Convention	Use
 Note	An important piece of information that needs your attention.
 Tip	A useful tip that might make it easier, better or faster to perform a task.
 Remember	A reminder of something important that relates to the information you are reading.

## 1.2 Additional reading

This document contains information that is specific to this product. See the following documents for other relevant information:

**Table 1-2: Arm publications**

Document Name	Document ID	Licensee only
Arm® Architecture Reference Manual Supplement, Armv9-A, Issue B.a	DDI 0608B.a	No



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Adobe PDF reader products can be downloaded at <http://www.adobe.com>

## 1.3 Other information

See the Arm website for other relevant information.

- [Arm® Developer](#).
- [Arm® Documentation](#).
- [Technical Support](#).
- [Arm® Glossary](#).

## 2 Known issues

This document records known issues in the Arm Architecture Reference Manual Supplement, Armv9-A (DDI 0608), Issue B.a.

This document lists the known issues in the architectural rules content only. For a list of known issues in the register, instruction, and pseudocode XML, please see <https://developer.arm.com/architectures/cpu-architecture/a-profile/exploration-tools>.

Key

- C = Clarification.
- D = Defect.
- R = Relaxation.
- E = Enhancement.

### 2.1 The Transactional Memory Extension

No issues.

### 2.2 The Embedded Trace Extension (ETE)

No issues.

### 2.3 The Trace Buffer Extension (TRBE)

The known issues in the TRBE architecture are listed below:

#### 2.3.1 R1291

In section E1.2.2.4 (Faults), the following entry titled 'External abort on translation table walk or translation table update' is added to rule  $R_{QKLR}$ :

The translation of a virtual address to a physical address might generate an External abort on the translation table walk or translation table update, and treated as a synchronous MMU fault. See also E1.2.2.5 External aborts.

In the same section, in rule  $R_{FSPBK}$ , the following text is added:

If a write by the Trace Buffer Unit generates an External abort on a translation table walk or translation table update, it is **IMPLEMENTATION DEFINED** whether  $TRBSR\_EL1.EA$  is set to 0b1 or unchanged.



In section E1.2.2.5 (External aborts), in rule  $R_{DJLWB}$ , the entry ‘External Abort on translation table walk or translation table update’ is extended as follows:

An External Abort on a translation table walk or translation table update might be treated as a synchronous MMU fault. See E1.2.2.4 Faults.

## 2.4 The Branch Record Buffer Extension (BRBE)

The known issues in the BRBE architecture are listed below:

### 2.4.1 C1306

In section F1.1.9.1 (Filtering on type), rule  $R_{FJYDC}$  that currently reads:

It is **IMPLEMENTATION DEFINED** whether Branch records are generated for the following instructions when the instruction is executed in a non prohibited region and if any of the following are true:

is updated to read:

It is **IMPLEMENTATION DEFINED** whether Branch records are generated for the following unconditional direct branch instructions when the instruction is executed in a non-prohibited region and if any of the following are true:

Within the same section, the title of Table F1.10 is updated to ‘Optional A64 unconditional direct branch instructions’.