

MIRA sensor settings

Quick Start Guide

ams OSRAM sensor configuration tool

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Tobelbader Strasse 30, 8141 Premstaetten, Austria

Phone +43 3136 500-0

ams.OSRAM.com

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1 Out of the box

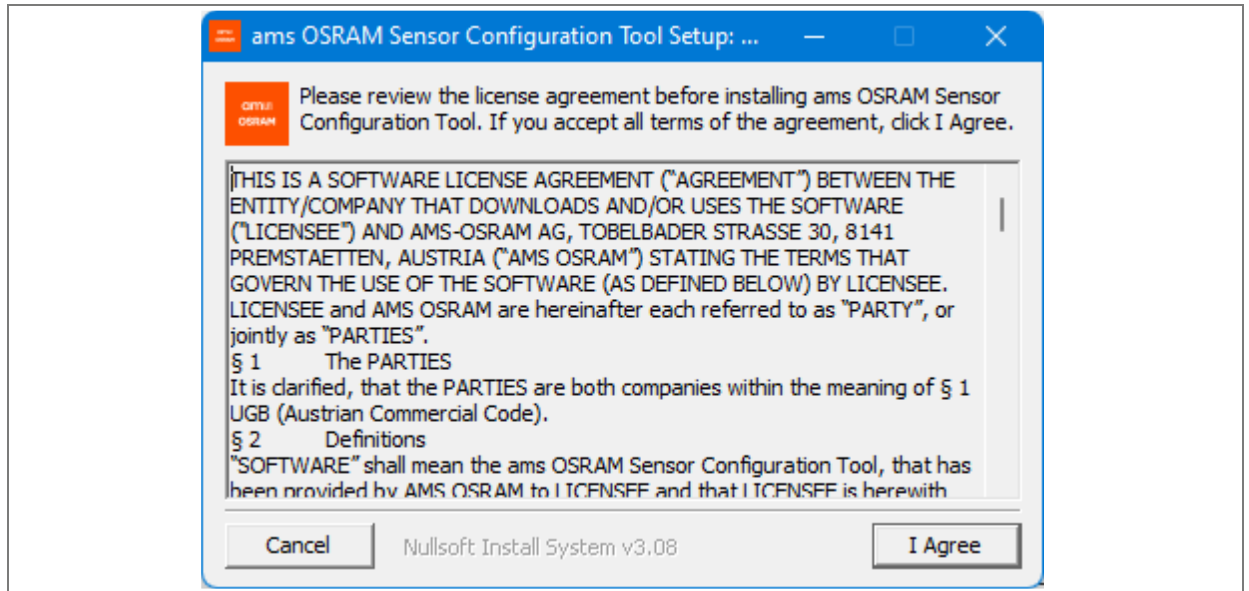
The ams OSRAM Sensor Register Configuration Tool provides an overview of all the registers that are available on the Mira sensor and allowing configuring correct values for these registers. It provides feedback on register limitations (e.g. only allow a value in a certain range or below a certain maximum value) and warns about incompatible dependencies between multiple registers (e.g. cross constraints). Finally, the tool is able to export the configuration into a sensor-specific file, which can be uploaded to the Mira sensor to configure its registers.

Please note that it is a static register configuration tool. Setting the board supplies, applying timed signals to the external IO's and dynamic operations like OTP access remain the responsibility of the user.

2 Installing ams OSRAM sensor configuration tool

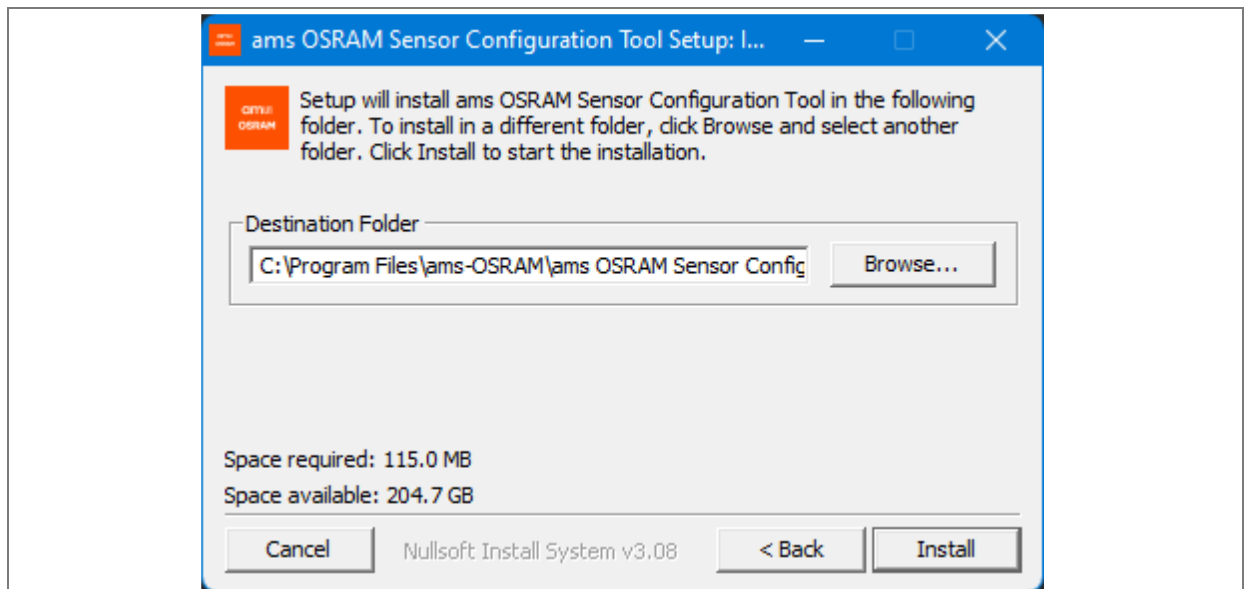
1. Open the installer by double clicking the installer exe file.
2. Click "Yes" when Windows User Account Control asks you permission.
3. The installer wizard appears.
Please read the license agreement and click "I Agree" to continue if you agree.

Figure 1: License Agreement



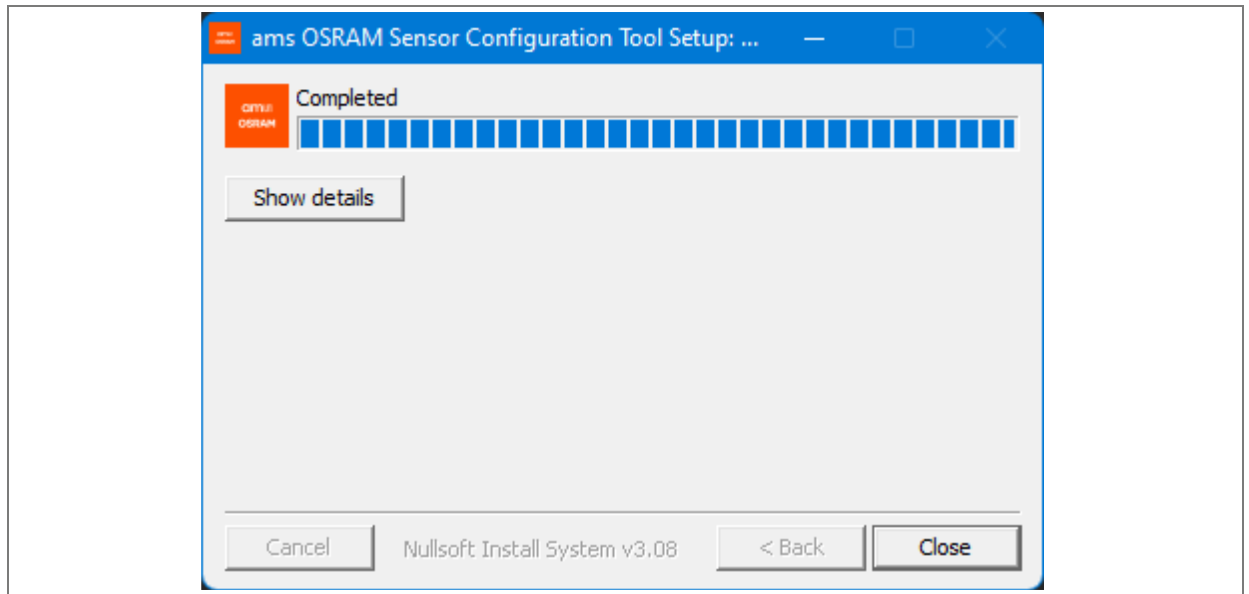
4. On the next page, verify or change the location where you want to install and press "Install".

Figure 2: Setup



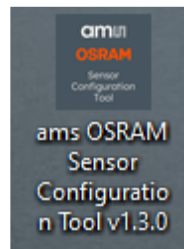
5. The installation is completed when the following page appears. Press “Close” to exit the installer.

Figure 3: Installation window



3 Running ams OSRAM sensor configuration tool

1. After installation, the application can be launched by double clicking the shortcut on the desktop.



2. Or by starting the application via the Start Menu, see the “Recently added” section (Windows 10) or the “Recommended” section (Windows 11), or via the ams OSRAM folder in “All apps”.

Figure 4: Recommended

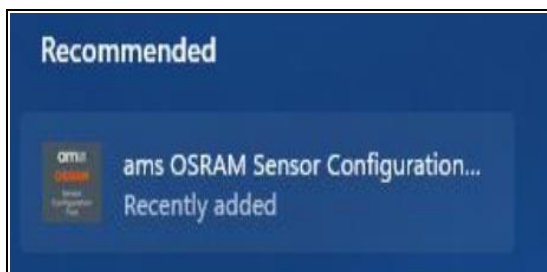
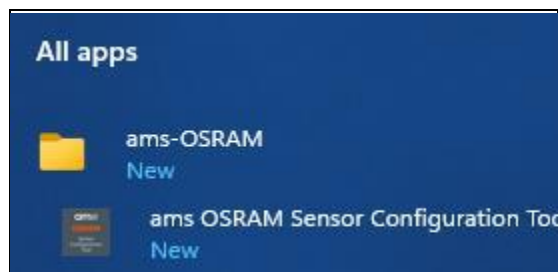


Figure 5: ams OSRAM folder in “All apps”



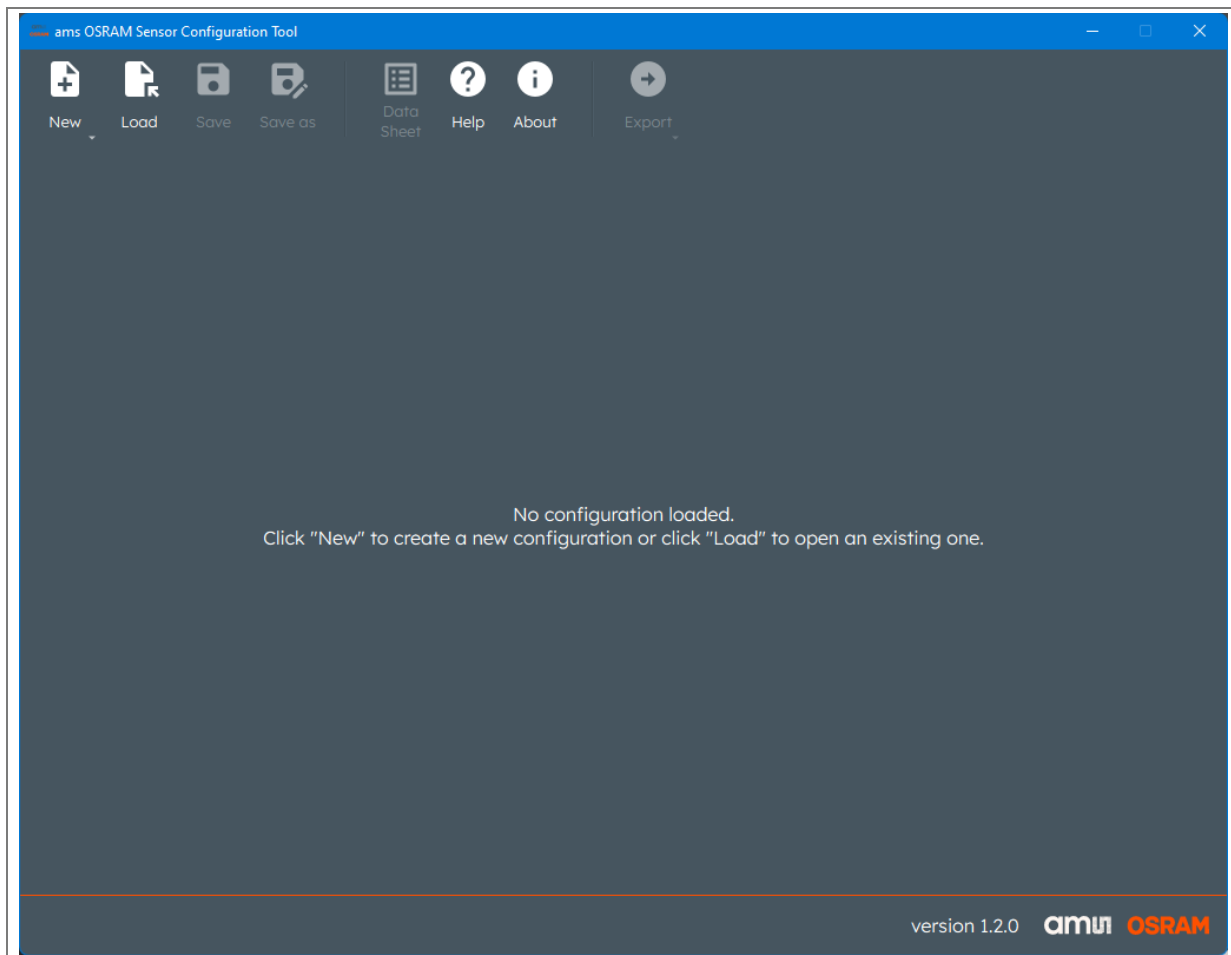
3. After launching, first, the splash screen appears.

Figure 6: Splash screen



4. Next, you are greeted by the following window.

Figure 7: ams OSRAM sensor configuration tool – initial screen



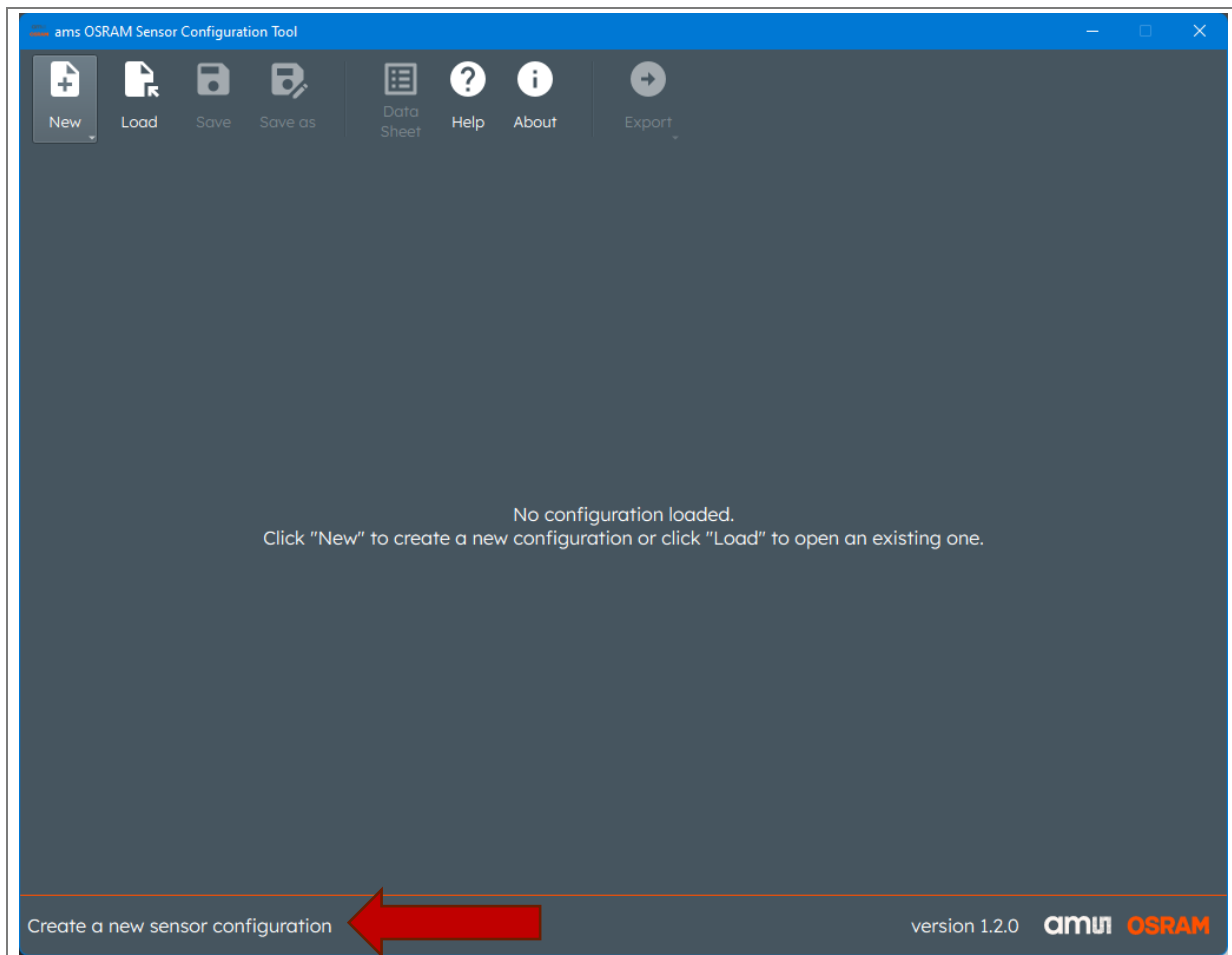
5. From here on you can either create a new sensor configuration, or load an existing one from disk.



Information:

When you hover an item in the tool, like e.g. a button or the name of a parameter, some additional information is shown in the status bar at the bottom left. This can be e.g. a guidance text explaining what button does, or a short explanation together with the allowed range for a parameter.

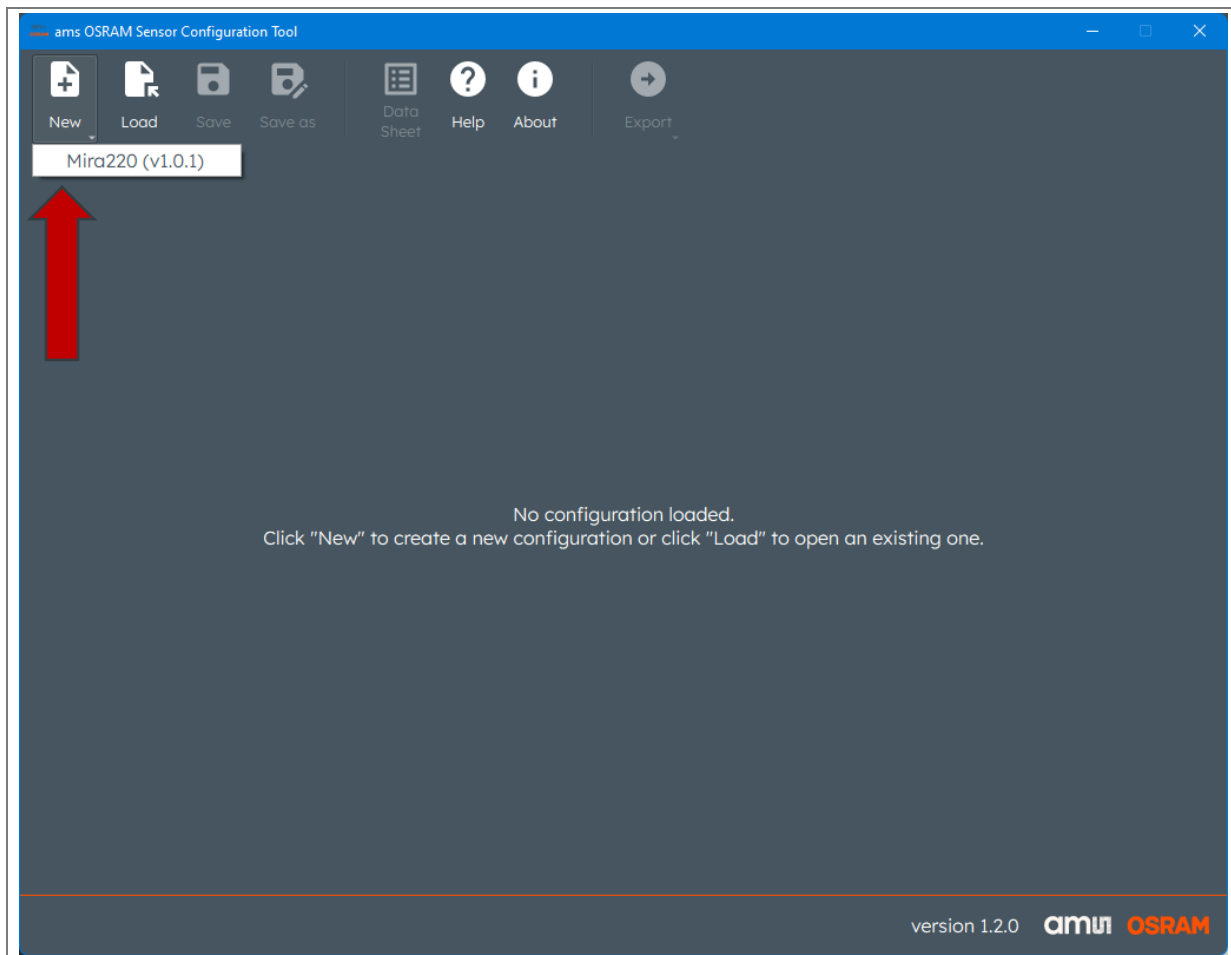
Figure 8: ams OSRAM sensor configuration tool - new sensor configuration



3.1 Creating a new configuration

You can create a new configuration by clicking on the “New” button, and selecting the Mira sensor you want to generate a configuration for:

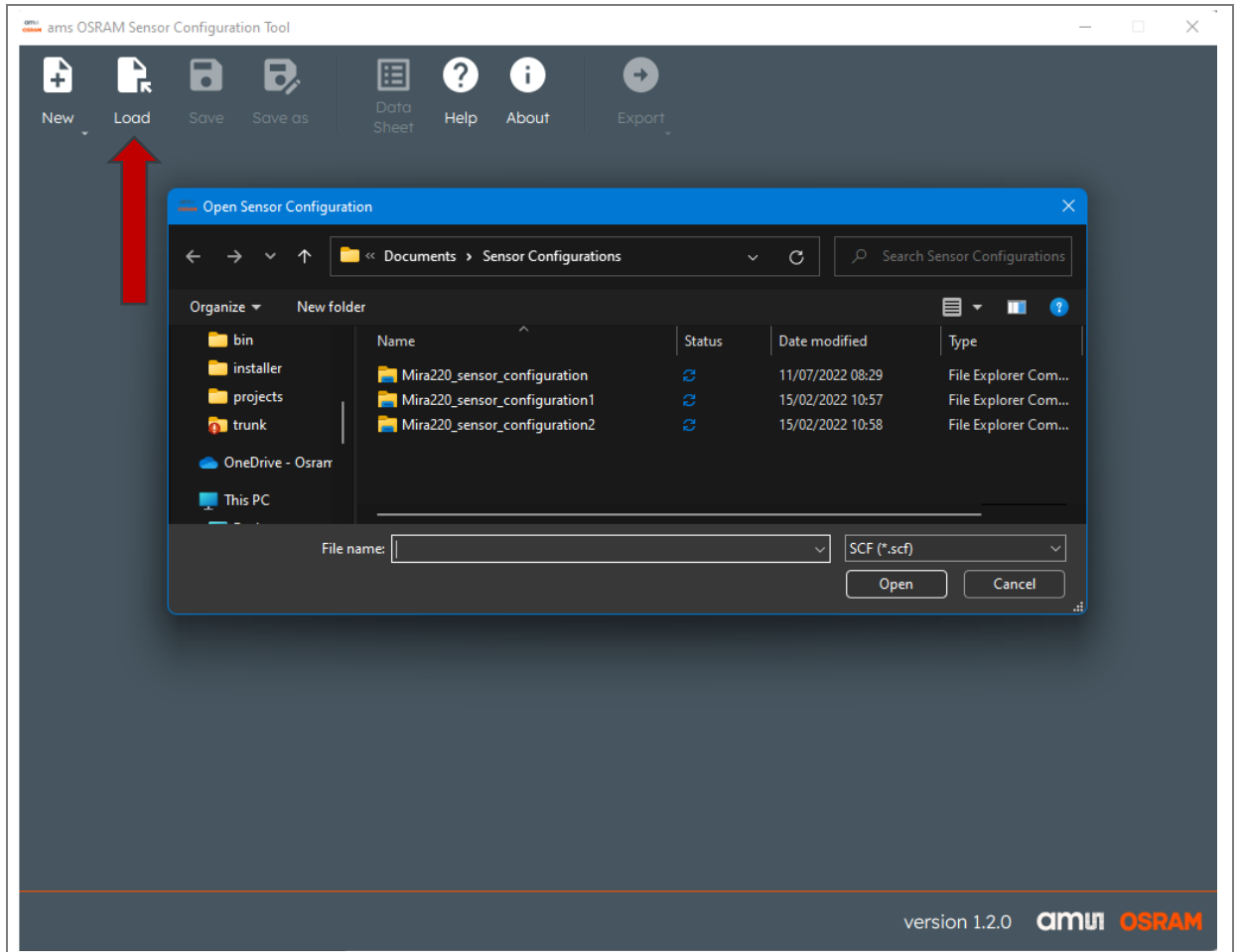
Figure 9: Creating new configuration



3.2 Loading an existing configuration

You can load an existing configuration by clicking the “Load” button, after which you are prompted to navigate to the sensor configuration file (.scf) you want to load. This can be one you or someone else previously saved, or one of the so-called templates provided by the ams OSRAM applications team.

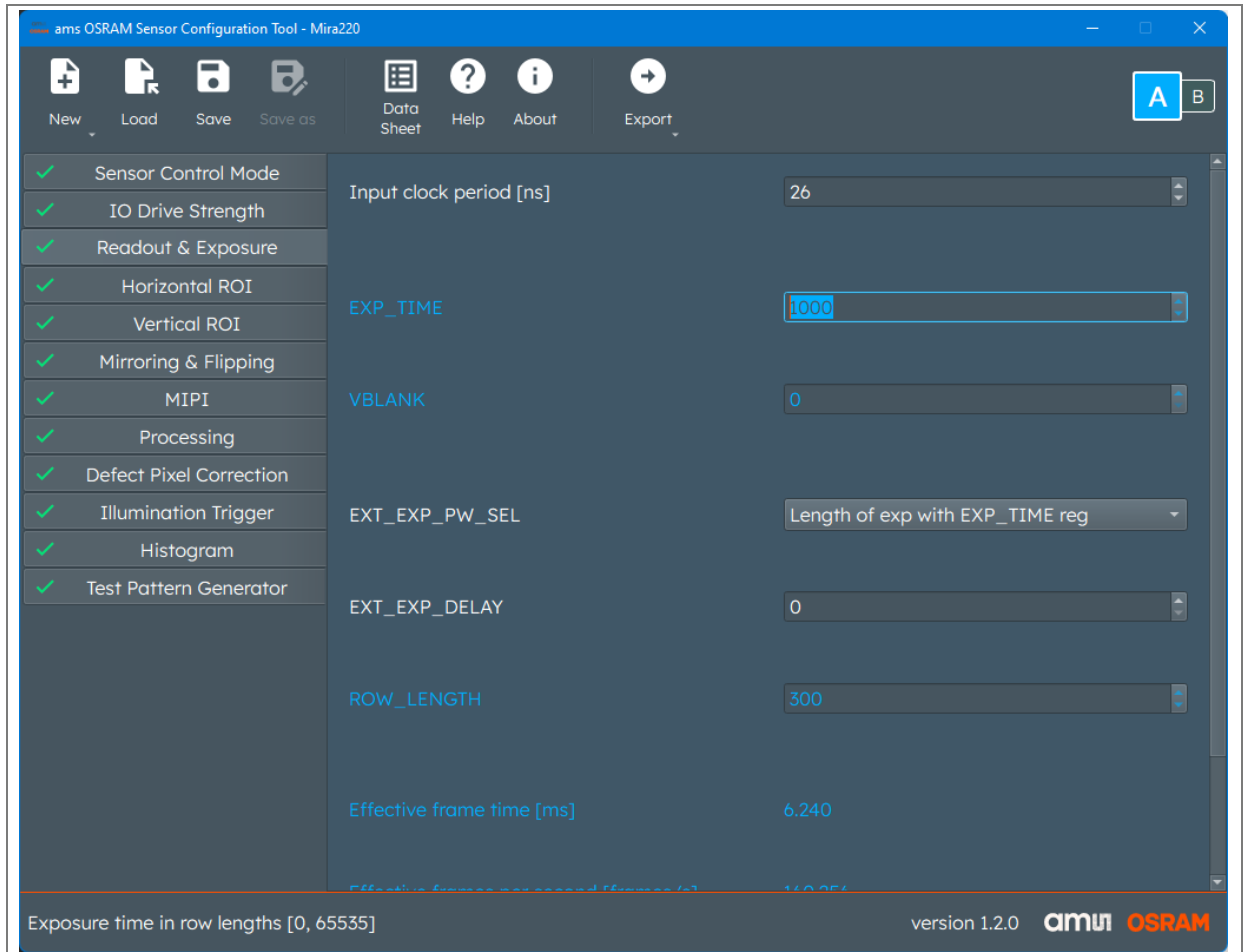
Figure 10: Loading an existing configuration



3.3 Editing a configuration

After creating or loading a configuration, the central part of the application is populated with tabs representing the register groups at the left side, and the actual parameters at the right side. For each parameter, there is a name and a control (e.g. text edit or dropdown menu). If the parameter has a unit, then it is displayed between square brackets after the name. When creating a new configuration, the default value is configured for all parameters. Use the controls at the right to change the value. The controls are configured to only allow setting valid values for the parameter. Some parameters (like e.g. Effective frame time in the screenshot below) cannot be altered, they are purely informative. Their goal is typically to display the value of a parameter that is based on the value of one or more other parameters.

Figure 11: Editing a configuration



Information:

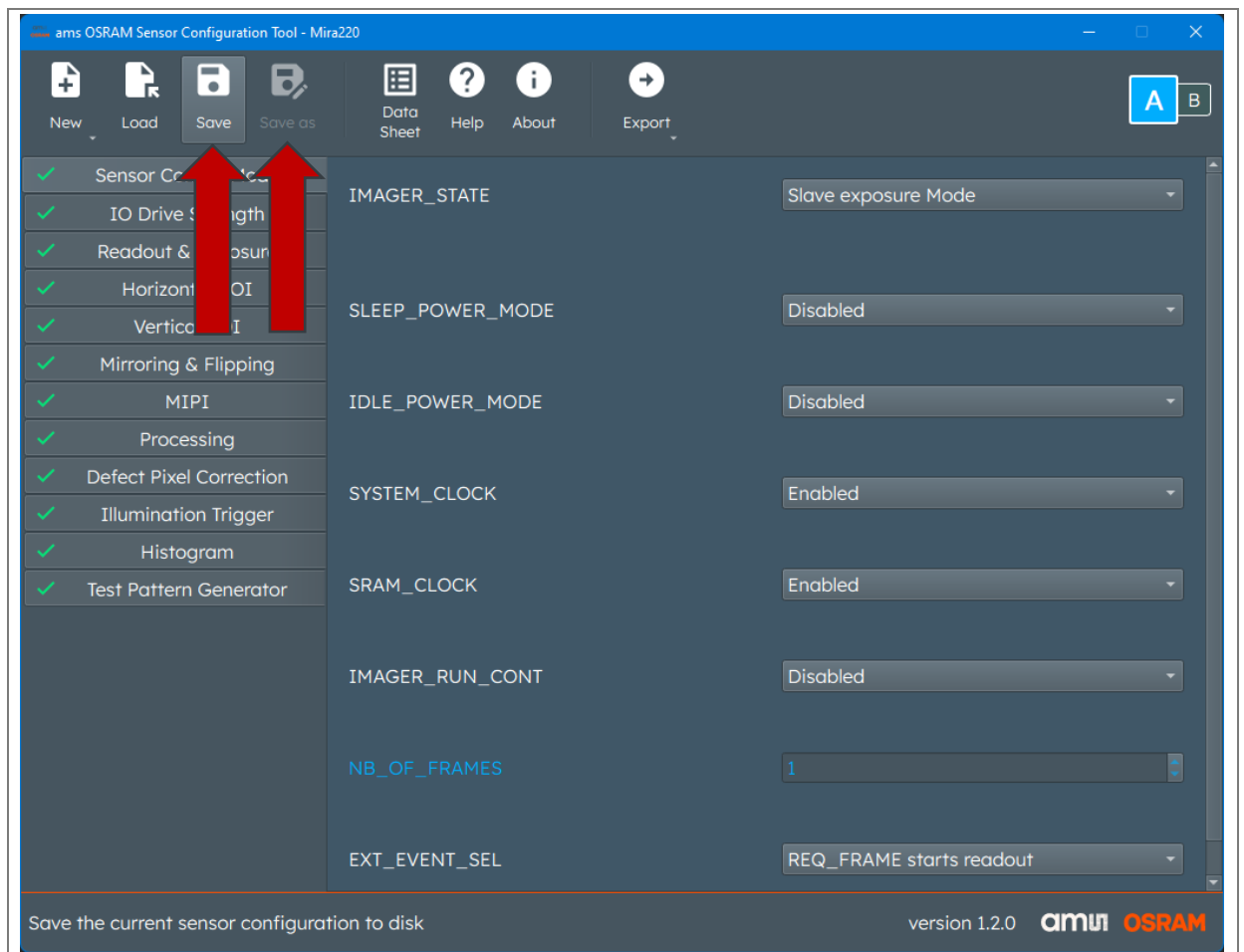
- A parameter name with all capitals and underscores (like e.g. EXP_TIME in the screenshot above) indicates that that the parameter corresponds one-on-one to a register on the sensor. A parameter name with a regular text (like e.g. Input clock period) means that its value is not directly used by a registers on the sensor, but indirectly (e.g. some additional conversion is done).
- Numerical values can be changed by clicking the up/down arrow of the control, by typing directly in the text field of the control, or by scrolling with the mouse wheel. Pressing the up/down arrow on the computer keyboard will higher/lower the value with a small step, pressing Page Up/Page Down will higher or lower the value with a big step.

3.4 Saving a configuration

To save a configuration, click the “Save” button. A dialog will appear to select the location for saving the configuration.

If a configuration was already saved before, it is possible to save a copy. This can be done by clicking the “Save As” button.

Figure 12: Saving a configuration



Information:

It is not possible to save the configuration if there are errors.

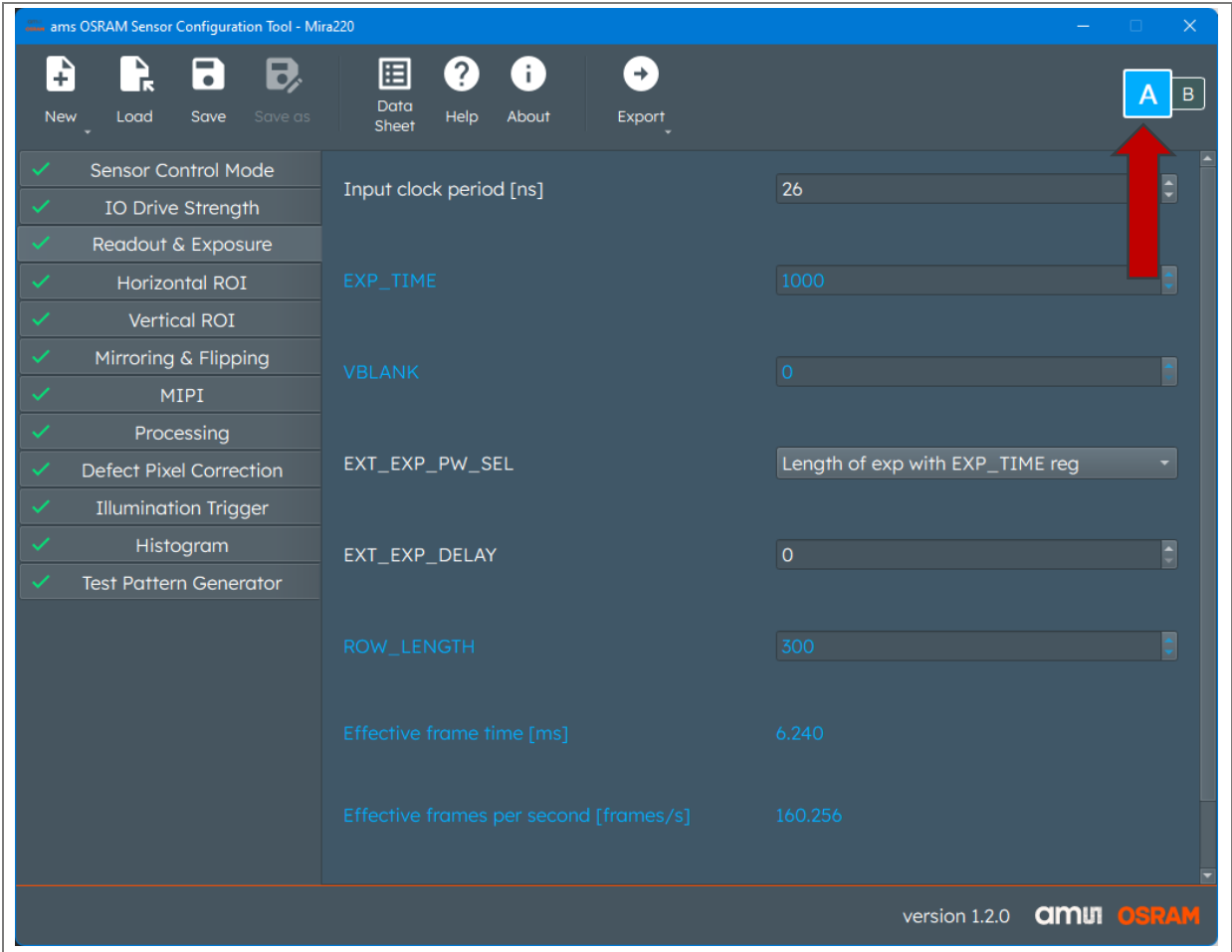
3.5 Switching between contexts

Some sensors support context switching. This means that two (or more) sets (“contexts”) with register values are loaded into the sensor and of them is set active (meaning the values of this set are loaded into the sensor registers). This feature allows to have multiple configuration loaded in the sensor and to quickly switch between them. For more information on this, please consult the user guide or datasheet of the specific Mira sensor that you are using.

Parameters that support context switching can have a different value for each context (parameter set). Changing the value in one context will not change the value of the other context(s). In the ams OSRAM Sensor Configuration Tool, each context has a fixed name (like ‘A’ or ‘B’) and a pre-defined color. The color of the context that is currently active is reflected in the background and in the parameters that are context switchable. Parameters with a white text are not context switchable. This means that changing their value in one context will also change the value in all other contexts. Switching between the contexts can be done with the “Context” button at the top right.

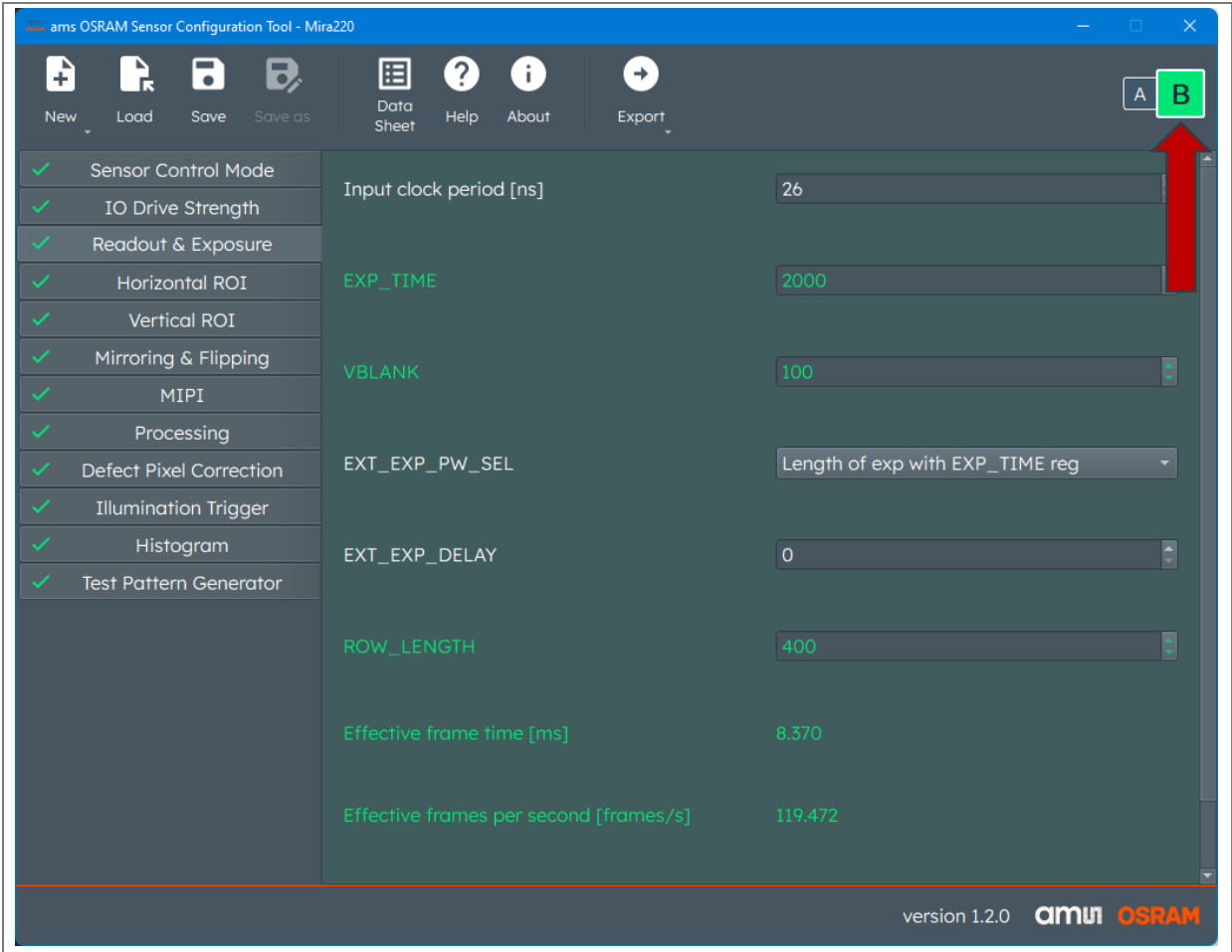
In the below screenshot, context A is active and parameters *EXP_TIME*, *VBLANK*, *ROW_LENGTH* and *Effective frame time* are context switchable.

Figure 13: Switching between contexts - A



The next screenshot shows the same register group as above, but now with context B activated and with different values for the context switchable parameters.

Figure 14: Switching between contexts - B

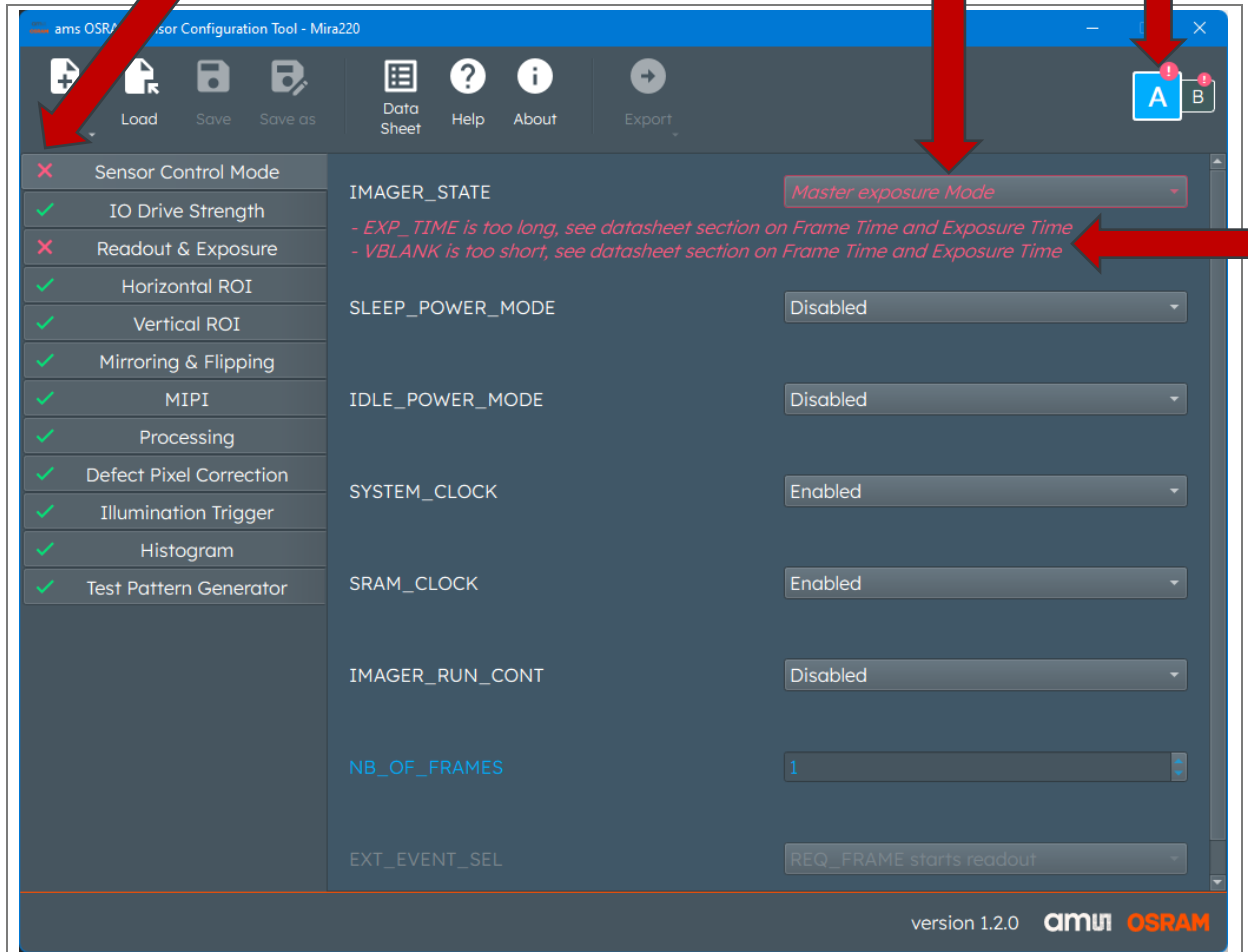


3.6 Resolving errors

Some of the parameters are dependent on the value of one or more other parameter(s). Configuring a value that is invalid for one of them, can trigger an error due to a violation of a cross constraint. If this happens, then all involved parameters are colored red, and an error message is displayed below the involved parameters. In addition, the green checkmark of the register group becomes a red cross, and there will be an error badge shown in the context button on top of all contexts that have errors.

Saving or exporting the configuration is only possible when all errors are resolved.

Figure 15: Resolving errors



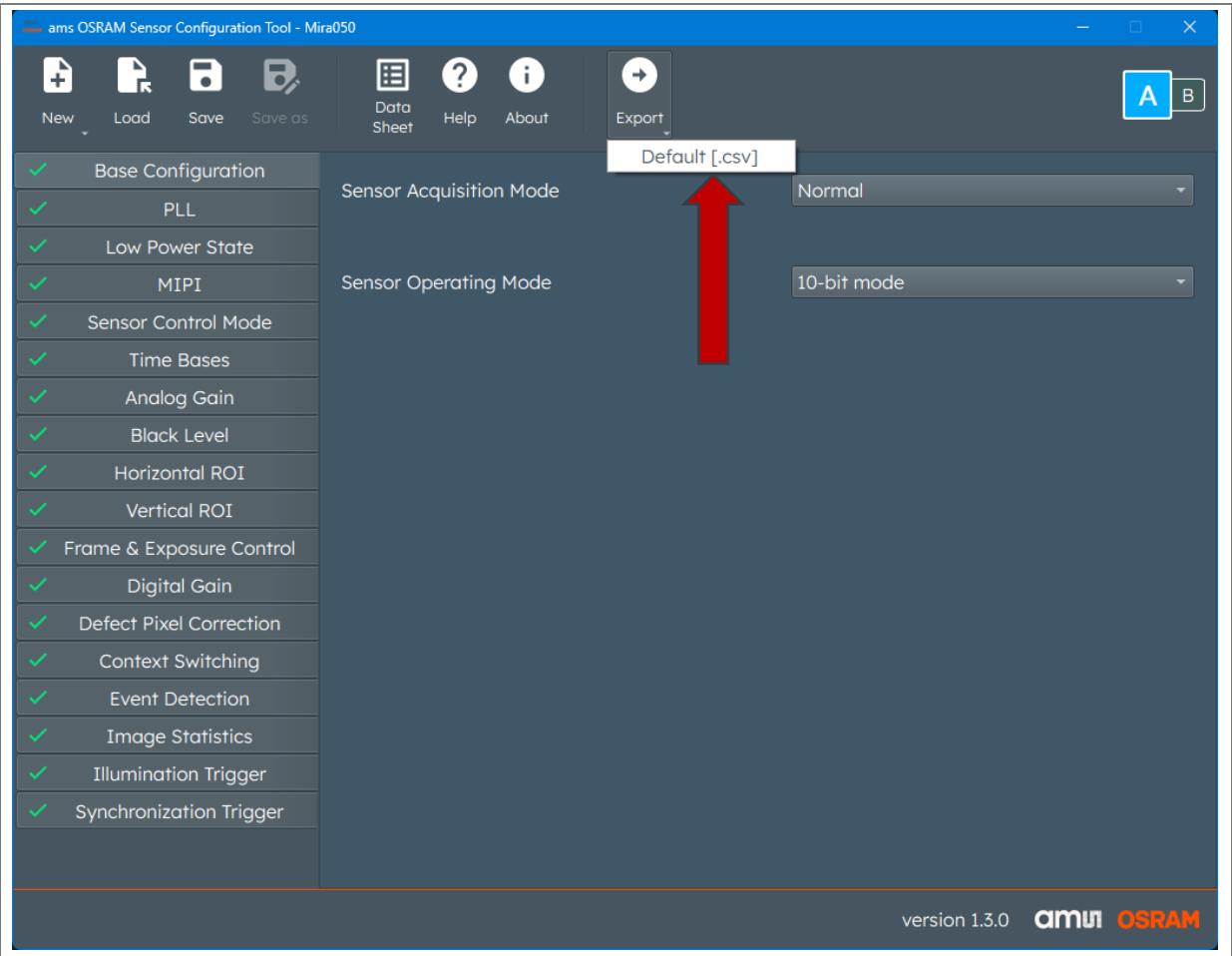
3.7 Exporting a configuration

If you want to use the configuration which you prepared with the ams OSRAM Sensor Configuration Tool in the real sensor, you can export it into a sensor specific configuration file using the “Export” button. The Default export will generate a .csv file with each line in the format “<address>,<value>[,<comment>]”, where address is 16-bit, value is 8-bit and comment is optional. Depending on the sensor, other file formats can be available. After selecting the desired format, you are asked to select the location for saving the exported file.

After the confirmation message, the export is finished, and you can start using the file to configure the sensor. Please note that this file only configures the sensor registers. Board

supplies, external IO and dynamic operations like OTP access remain the responsibility of the user.

Figure 16: Exporting a configuration



4 Revision information

Definitions

Draft / Preliminary:
The draft / preliminary status of a document indicates that the content is still under internal review and subject to change without notice. ams-OSRAM AG does not give any warranties as to the accuracy or completeness of information included in a draft / preliminary version of a document and shall have no liability for the consequences of use of such information.

Changes from previous version to current revision v1-00	Page
Initial production version	
<ul style="list-style-type: none">• Page and figure numbers for the previous version may differ from page and figure numbers in the current revision.• Correction of typographical errors is not explicitly mentioned.	

5 Legal information

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Headquarters

ams-OSRAM AG
Tobelbader Strasse 30
8141 Premstaetten
Austria, Europe
Tel: +43 (0) 3136 500 0

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