



Webinar and Demo: Meet RSCAD FX!

Wednesday, April 21, 2021

Questions and Answers

If you have any further questions, please contact marketing@rtds.com.

Q1: Will the webinar recording be made available?

Yes. The webinar recording is available to all registrants. A link has been included with this document in the post-webinar email.

Q2: Do I need to uninstall the previous version?

You do not need to uninstall previous versions of RSCAD in order to install RSCAD FX onto your system. Both RSCAD V5 and RSCAD FX can co-exist on your PC.

Q3: I see the default file format has changed from .dft?

Yes, the Draft file extension has changed from .dft to .dfx. Near the end of webinar demonstration, I showed what happens when you open a .dft file in RSCAD FX – it will prompt our Case Conversion tool to pop up. This is an automatic file conversion program that will convert the .dft file to .dfx and allow you to use the Draft file in RSCAD FX.

Q4: How is RSCAD FX compatible to previous versions? Can we make a case in FX and save it as a file that can be opened and run in a previous version?

RSCAD FX Draft files (.dfx) cannot be used in previous versions of RSCAD which use the .dft file format.

Q5: When going through the RSCAD FX library, Superstep doesn't seem to have been mentioned. Is this still a function?

Superstep is still a feature in RSCAD FX. Along with *Mainstep* and *Substep*, it is one of the 3 core simulation modes of the RTDS Simulator. Most components found in the 'Power





System', 'Controls', and 'Protection & Automation' groups of the component library can be used in the Superstep environment. Like Substep, there is no dedicated submenu of the Library dedicated to Superstep. Instead, you can use the filtering options in the library to show the models that can be used in the Superstep environment.

Q6: How is "Run Case" in draft different from the similar button that exists in RunTime?

The 'Run Case' button in the Draft case tab toolbar simply opens the RunTime environment for the case. The 'Run' button within the RunTime environment is what actually begins running the real-time simulation.

Q7: When will the RunTime environment be updated?

RunTime FX is the next stage of RSCAD FX. It is currently under development at RTDS Technologies. We are currently aiming for release in Q1 of 2022, but the timeline may change depending on beta testing.

Q8: Is there a way to set a naming rule when using the Auto-Naming? Great feature but generally (especially for signal names) I prefer to have a meaningful name i.e. I_Loc1toLoc2.

This can be achieved using the Enumeration String setting, which can be found in the Auto-Naming Settings parameter menu. Changing the Enumeration String allows the user to effectively create a custom enumerator by adding leading or trailing characters, including underscores and numbers. The '#' reserved character is included somewhere within that custom string and will increment as normal when Auto-Naming Incrementation is turned on. This would be especially useful when creating custom signal names.

Q9: Regarding Auto-Naming, can I change the value assigned to the enumerator afterwards? e.g. change it from 4 to 10

Yes, the value of the enumerator can be manually set. This can be done using the Enumeration Value parameter of the component's Auto-Naming Settings.





Q10: Does Auto-Naming work on Hierarchy boxes too (i.e. will it automatically update all the signal names inside the box)?

Yes, Auto-Naming can optionally be applied to the entire contents of a Hierarchy box. By right-clicking the Hierarchy box in the Draft canvas, you can access the Auto-Naming Settings to be applied to the Hierarchy box.

Q11: Did the T-Line_V2 change, or can we use it in the same way as in the previous version?

The T-Line module has not changed at all, so T-Line V2 in RSCAD FX can be used in the same way as it was in RSCAD V5. This also goes for the Cable module.

Q12: Has the Config File from previous versions changed?

The config file itself has not changed and the Config File Editor's graphical user interface looks the same as it did in V5 as well. It can be accessed by clicking Utilities in the top drop-down menu.

Q13: After I changed to FX, the same file generates different results from previous RSCAD.

For questions like this regarding results from a particular simulation case, please contact our simulation support team at support@rtds.com or by submitting a support ticket through the RTDS Technologies Client Area website.

Q14: What does "FX" stand for?

RSCAD FX was built using Java FX, so the 'FX' in the software name is a reference to that.

Q15: What is the meaning of bold numbers above some components? For example, if I insert a GSE v7 component I will see "11" above the function block.

These bold numbers on the Draft canvas are the Control Group and Priority numbers for those components. There is a small icon called 'Toggle Control Group and Priority On/Off' in the Draft case tab icon toolbar. If you select that, you will no longer see those numbers.

Q16: Are there any resources available online (e.g. step-by-step tutorials) on the practical use of RTDS (connection of RTDS with I/O interfaces)?





Included with the RSCAD software are several sample cases for hardware-in-the-loop testing. These cases are fully documented and include step-by-step instructions on how to achieve the interface using the RTDS Simulator's I/O. There are multiple examples for protection, including both conventional analogue/digital I/O and communication protocol-based I/O, and a couple of examples for controllers and distribution automation.

We don't currently have online videos that provide a step-by-step I/O tutorial, but we are looking into creating those in the future.

We do have general RSCAD FX software tutorials available online, on the RTDS Technologies YouTube channel.

Q17: Is there any difference in the RunTime files generated by RSCAD FX when compared to the older version?

The runtime file format (.sib) is the same in RSCAD V5 and RSCAD FX. Generally this runtime file can be used in both versions of RSCAD. Sometimes however, the .sib file is modified slightly when importing cases into RSCAD FX, so you might notice some differences if you try to use this modified file in RSCAD V5. A backup of the original .sib file is created before it is modified.

Q18: Is the conversion from .dft to .dfx totally clean? How does it perform for custom user-defined models and large cases?

We have done extensive validation on the .dft to .dfx conversion tool and comparing results between RSCAD V5 and RSCAD FX, including with several larger, multi-rack/chassis cases. Generally it performs very well, but occasionally there are differences. One of the reasons is that we have improved our control ordering algorithm, and it now considers control components linked by signal names in the order (rather than only those directly wired together). Because of this, there are possibilities for occasional differences. If you notice any problematic differences, please contact RTDS Support.

User-defined models (made in Component Builder) can be easily ported from RSCAD V5 into RSCAD FX. The process is fairly seamless. RSCAD V5 CBuilder components are detected if they are opened in RSCAD FX and the user is prompted on whether they would like to port the component to FX. There is also a utility in CBuilder that allows for bulk conversion of several user defined models at once.





Q19: Is it possible to translate models from DigSILENT PowerFactory to RSCAD FX? If not, is this a feature that RTDS might be focusing on add in RSCAD in the future?

It is not currently possible to directly import PowerFactory models into RSCAD, but we are working on a PowerFactory conversion tool. We expect this tool to be available in the medium term – we will announce the release via our mailing list.

Q20: Up to how many nodes is the PSCAD/RSCAD FX translation tool completely accurate?

There is no node limit for the PSCAD to RSCAD Conversion Tool. If you have questions about converting a particular case, please contact RTDS Support.

As is the case with any conversion tool, we cannot claim that the PSCAD to RSCAD conversion is “completely accurate”. However, we have done extensive validation and can state that normally, minimal or no user intervention is required to convert the case. It is possible that some cases will require more user intervention.

Q21: Does RSCAD FX convert custom components from PSCAD?

No, the PSCAD to RSCAD Conversion Tool does not work on custom components.

Q22: If have models built in C-model in the previous version, do I have to do any changes or updates in the model to use it in RSCAD FX?

The actual C code and .h file that are part of a user-defined model from RSCAD V5 are unchanged in RSCAD FX. Some changes may be required to the component definition file, but if you open up an RSCAD V5 component definition file in RSCAD FX, the software recognizes that it's an older file and makes the required changes automatically. The component should then work in RSCAD FX.

If this question was regarding scripting in RunTime, then the C-type scripting currently works exactly the same in RSCAD FX as it did in RSCAD V5.

Q23: Does the auto-naming incrementation not work when the components are already implemented in the draft file?

This depends on the status of the global Auto-Naming Incrementation toolbar icon, as well as the status of the Enable/Disable setting in the Auto-Naming Settings menu for individual





components, when the components were placed on the canvas. The user has control over when the enumerator increments for Auto-Naming.

Q24: So the scratchpad is like a 'glorified' clipboard in Windows i.e. with save and load functionality?

Yes, this is a good way to think about the Scratchpad in RSCAD FX. You can have many pages with different 'clipboard' contents conveniently available for you to drag into a case.

Q25: Does RSCAD FX has a "Jump to..." functionality to locate for instance the other terminal of a transmission line on the canvas?

Yes. This can be done by right-clicking the transmission line model, clicking 'Find' and then 'Line End'. Other components have different options in the 'Find' menu – commonly, the only option is to 'Find' other components of the same type on the canvas. The 'Find' functionality is particularly useful in cases with multiple subsystems.

Q26: Has black-boxing improved in RSCAD FX?

Yes. When building a case to distribute to a third party, a user may want to obscure details about proprietary parts of that case while still allowing the third party to use the obscured parts as 'black box' components. The third party would only deal with the inputs and outputs of the obscured portions of the circuit, the details within would be unknown to them. The mechanism for hiding details about all or a portion of the case has been modified in RSCAD FX compared to previous versions of RSCAD.

Any components that are intended to be hidden/obscured should be placed inside of a hierarchy box. When the user is ready to obscure the contents of a hierarchy box, they can right-click on the hierarchy box and select 'Pre-compile' from the context menu that appears. A compiled file representing the contents of the box is generated in the form of a separate .hbo file. To use the compiled .hbo file, remove the original hierarchy box and replace it with a Compiled Hierarchy Box (_rtds_compiled_hierarchy_box.def). The compiled .hbo file can be referenced by appropriately setting the hboFileName parameter inside the compiled hierarchy box. The whole case can then be compiled as though the original hierarchy box was still present. For more information, see Section 7.6, 'Compiled Hierarchy Boxes' in the RSCAD FX Quick Start Guide.




**Q27: Can I make the icons and text of the toolbar bigger?**

The current release of RSCAD FX does not allow the resizing of icons. We've heard this request from others and it is something that we are considering as a future enhancement.

Q28: I see that edit expression is still present. How does this work with the enumerator?

The enumerator is evaluated for each component and all parameters are resolved using that value. The resolved parameter names are searched and can be modified using the edit expression feature.

Q29: I've been trying to import the tsat_rtds_interface.def into the user library without success. Is it considered to upgrade this interface to RSCAD FX?

Try copying the tsat_rtds_interface.def file into your user directory's \ULIB\COMPONENTS subdirectory. Next, press the  icon in the Library utility tab. You should be able to add the tsat_rtds_interface.def file to one of your user libraries after doing so. Please contact support if I have misunderstood your problem or if difficulties persist.

Q30: Is possible to display the assigned core of a given power system component at the canvas? e.g. TLINE assigned to Novacor core 4.

Unfortunately there is no current functionality to display on the drawing canvas the assigned core for a power system component.

Q31: Would it be possible to install FX for multiple users on one system? Previously locally the activation key would be stored in the users home directory. Since all users will log on to the system with their own account this will vary and will require a new key.

The mechanism for security keys is the same in RSCAD FX and RSCAD V5. In the situation described, each user will require a copy of the security key in their RSCAD user directory (C:\Users_user_name_\Documents\RSCAD\Security). The key should be the same for all the users so the system administrator should just have to make a copy of the valid key available to all the users.

Q32: Can you drag the sub-systems to rearrange them now rather than having to copy paste the components? (sometimes required to save physical wiring changes)

Yes, it is now possible to rearrange sub-systems using drag and drop.





Q33: Is the new file extension a binary format or is it structured similar to previous version with reference to components? Manitoba Hydro has developed a powerflow initiating tool that directly modify the draft file using the actual system operation data.

The new .dfx file format is not a binary format. Some modification to your tool would be required but it should be possible to directly modify the .dfx file using actual system operation data in a similar way that you did with the .dft file.

Q34: Does the T-Line end search functionality also work for RL/RC splits? Some PSS/E conversions introduce such lines.

Finding the remote end of an RL split is not currently supported in RSCAD FX. We can look into this as a possible future enhancement.

Q35: Is it possible to disable Hierarchy box from a csv file? What about RLC loads values from csv?

It is possible to enable or disable Hierarchy boxes from a csv file. It is not possible to change RLC load values directly from a csv file. As a work around you can set draft variables from a csv file which can then be used to control the RLC load values.

