

Disclaimer

Following all which is said in this manual does not guarantee that your design will work, nor does it guarantee that the macro will function as you plan. So, that's that!

What's New in Version 2.1

Nothing big, but some really useful improvements and bug fixes as listed below:

- The **Full Names** tab is now transformed into the **Elements Info** tab. I moved it to the left of all other tabs too, to accentuate its role in the modeling process. This tab is now your and the program's reference for all element information, including every element's full name, ID, completion level and description.
- Adding new elements or deleting, cutting and pasting current elements USING EXCEL FEATURES is now possible within the **Elements Info** tab. So the old menu commands for performing these tasks are now no more. You just add, delete or modify any element in the **Elements Info** tab, hit the provided **Update DSM** button, and the DSM will be updated accordingly.
- A swapping command is added to the DSM menu to ease up the related task (of swapping two DSM elements with each other).
- There is a completion level associated with each element in the **Elements Info** tab. It is a percentage value that can help track the maturity of a design parameter or the completion status of a task, for a parameter-based or a task-based DSM. A corresponding greenish color will be used in the **DSM** and **Partitioned DSM** tabs, on each elements ID, to represent this level.
- The completion level is now showed in the popup message of each element.
- Bug fix: When some elements were deleted from the DSM, the status colors in the **Partitioned DSM** tab did not update properly. It is now fixed.

Previous Changes (Original Version to Version 2.0)

There were several changes made, to make the DSM Macro user-friendly and more effective. Here is a quick list:

- The most important improvement was the new reachability matrix calculation algorithm which has boosted the partitioning task up to 200 times faster. Now a 250 element DSM can be partitioned within under 10 seconds instead of the previous "tens of minutes" (the old algorithm was actually useless for large projects).
- A new tab called **Full Names** was added to hold the description and full names of the DSM elements. This way the main **DSM** tab could be cleaner using element abbreviations.

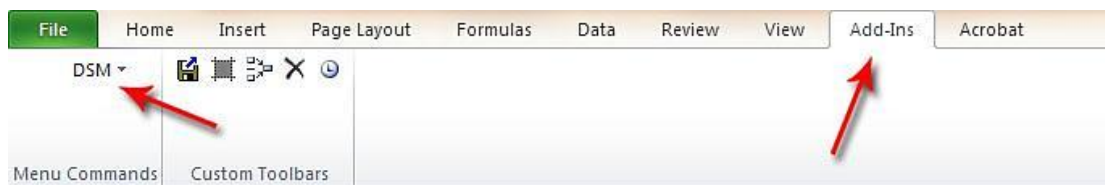
- The overall user interface was completely rebuilt for the main **DSM**, the **Partitioned DSM** and the newly added tabs.
- A new feature was added that allows the user to insert any number of new elements anywhere in the matrix.
- A new feature was added that enabled the user to delete a range of DSM elements from anywhere in the matrix.
- A new tab and a corresponding menu command were added to generate a dependence report of the DSM element. This helped, and helps, tracking dependencies easier, esp. in a large DSM.
- The Visual Basic code was modified to be more readable (mostly in the modified macros). Comments were added and better commenting and coding schemes were applied.

How to Use¹

When you first open the macro, Office asks you to enable macros as shown in the figure below.



When you accept to enable, a DSM menu is added to your Office menu ribbon as shown below.



You will also see a default 20-element DSM already implemented in the Excel file. You can start modifying it or you can delete all the elements and add new ones, all in the new **Elements Info** tab. Just don't forget to update your DSM every time you apply modifications.

¹ This section is written based on a 32bit Office 2010 version. The macro is not tested on other platforms but it should not have any problems.

Useful Hints

1. Please note that only one DSM file should be opened at a time. The macro code gets mixed up when you open more than one file simultaneously.
2. The **Elements Info** tab is the only tab in which you can and you need to make manual modifications. DO NOT add or delete DSM elements in other tabs. They work automatically based on the information you provide in this tab.
3. Currently only binary DSMs can be modeled. Numerical (or fuzzy) DSM support may be added later. Please enter 1 for an existing relationship and leave blank for none.
4. For those who don't know, this Excel macro is implemented using the Microsoft Visual Basic for Applications language. If you wish to edit a macro or browse the code on the count of your curiosity, or your need, go to the View menu tab in Excel and select Macros, then pick a macro and hit Edit. Microsoft Visual Basic for Applications will open and voila! (it means you should know the rest!).
5. Because this is an Excel file supported by a macro (and not a fully programmed application), making it bullet-proof against user manipulations is very difficult. That's why the user must be careful when manually editing its contents. As an example, cutting, copying and pasting cells in the **DSM** tab can cause problems. Use the new **Elements Info** tab to minimize such problems!
6. When an unexpected error pops up, it is usually best to close the file without saving and to reopen it again.

Thank you and happy designing!

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You may send your bug reports and suggestions to sm774113@gmail.com.