List of most-wanted corrections or additions for Siemens STEP7, incl. option packages like PLC-SIM, SCL, Graph, HiGraph and SFC.

The list below has been compiled from many posters input.
The order of the entries is completely arbitrary.
After the vote from March 5 – 9, I shall repost the list with the totals of the votes.

STEP7

1. Troublefree upload of "actual values" from datablocks, without losing defined symbols.
This doesn't work at all, despite it should according to Siemens manuals.

2. For shared datablocks, copy of actual values to initial values in one go.

3. A means to backup merker values.

(comment: points 1-2-3 means that there is currently no real way to make a true backup of the online project).

4. LAD/STL/FBD editor: Adress bits within symbolically defined adresses (INTs, DINTs etc).
For datablocks, a simple means to adress bits within bytes, words or doublewords, and without resorting to pointers, absolute adressing or other trickery. Something like "Motor1".StatusWord.$bit2 for bit 2 within "Motor1".StatusWord. At the moment, if a byte, word or doubleword has been defined symbolically, you cannot simply adress a bit within the symbol. This should also be possibe for variables that are declared internally within a block (i.e #StatusWord.$bit2).

5. LAD/STL/FBD editor: Load Structs if it fits into a Byte, Word or Doubleword.
For datablocks, a means to adress a Struct symbolically if it fits into a byte, word or doubleword. For example, if a Struct of 16 Bools has been defined like this:
Datablock "Motor1":
StatusWord   Struct
          Bit1   Bool
          Bit2   Bool
          Bit3   Bool
          Etc.
Then it should be possible to do like this:
L "Motor1".StatusWord
(S7Guy) Other thoughts on the symbol list: Allow me to manually enter Adresses of data block variables. For instance, DB10.DBW10 might be set up as a control word for a drive. But, it would also be good to set up the individual bits in the symbol table so I can Adress the individual drive commands as bools. Right now, the work around is to copy the drive word to local data and back again to keep symbolic Adressing intact, but it's an unnessary step.

6. Code protection.
A means to protect code blocks that actually works. The "know-how-protect" function can easily be bypassed. To password protect the CPU is not the answer this problem.

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7. LAD/STL/FBD editor: More "intelligent" display of comments.

If there are no comments in a network – then don't waste the screen space to display an empty comment block.

(Imi'ike) To add to this, then I would suggest that if you wanted to add a comment, then you could right click and select "add comment" from a pop up menu.

Network 31: Alarm # 19.6: (=61) Dust collector. ''error'' signal.
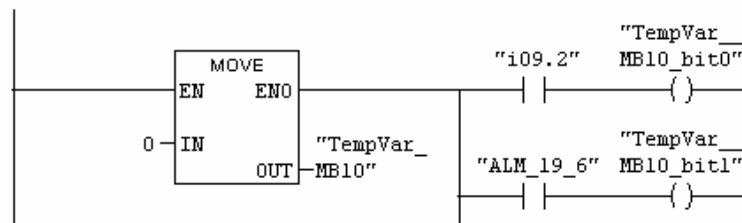
Comment: Irritating empty comment area.

"PilotVand 24VisON"   "i09.3"   "ALR_19_6"
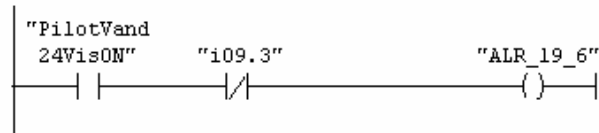
Symbol information:
PilotVand24VisON	M50.2	
i09.3	I9.3	-- +61-K2 Filter interface signal 2 "Filte
ALR_19_6	M219.6	-- Alarm # 19.6: (=61) Dust collector. ''e

Network 32: Item 61. Dust collector.

Comment:

MOVE — EN ENO — 0 IN — OUT "TempVar_ MB10"

"i09.2" — "TempVar__ MB10_bit0"

"ALM_19_6" — "TempVar__ MB10_bit1"

Above: Example of comment display with no comments to show.

8. LAD/STL/FBD editor: Adress copy-paste bug:

When selecting an existing adress for copy-paste, then when pasting it, only the very last part of the adress is displayed. If you want to modify part of the pasted adress, then you tediously have to move the cursor back to the hidden portion of the adress.

"PilotVand 24VisON"   "i09.3"

Above: Copy adress.

"PilotVand 24VisON"   24VisON"
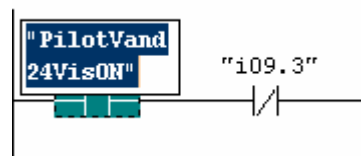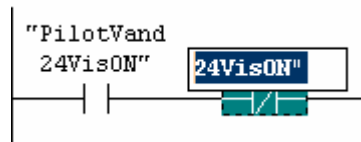
Above: Paste – part of adress is missing,

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9.   LAD/STL/FBD editor: Operate on DB "cells" as in a spreadsheet.
When editing a datablock, it should be possible to operate on the fields like in a spreadsheet. Like selecting a range of cells, and then copy-paste into another range of cells. Also, direct copy-paste from Excel into the LAD/STL/FBD editor would be nice.

10. New backup/restore/troubleshooting tool for service-people.
This tool should allow to upload and download, but not to modify projects. Also, the tool should allow hardware diagnostics. A cut-down, and reasonably priced, version of STEP7 could do the job.

11. A trendview for online values is missing.
At the moment, displaying values in VAT tables is often not enough for debugging or documenting.

12. LAD/STL/FBD editor: Quick jump to Datablock adress.
With a hot-key or fast menu selection jump to the datablock and adress that you are currently looking at.
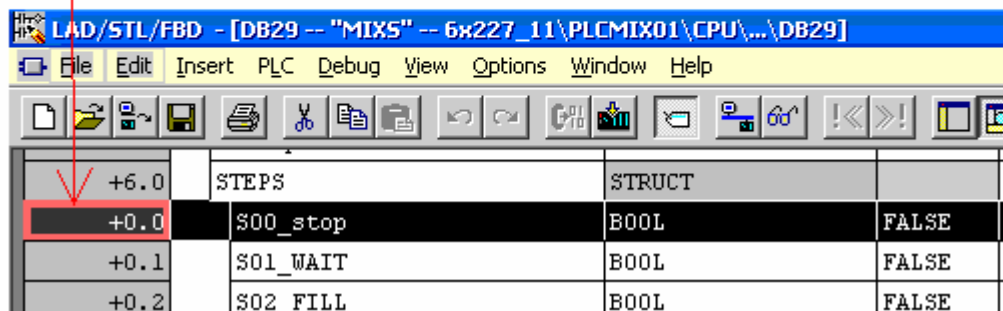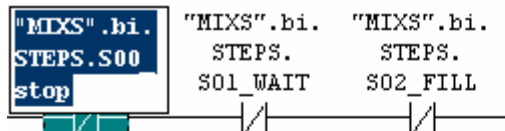
Above: Select an adress, then jump directly to the associated DB and adress within that DB.

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13. LAD/STL/FBD editor: Quick jump to STATUS/FORCE
While online, easily jump to the Status/Force view and have the selected adress automatically entered in the Force list.
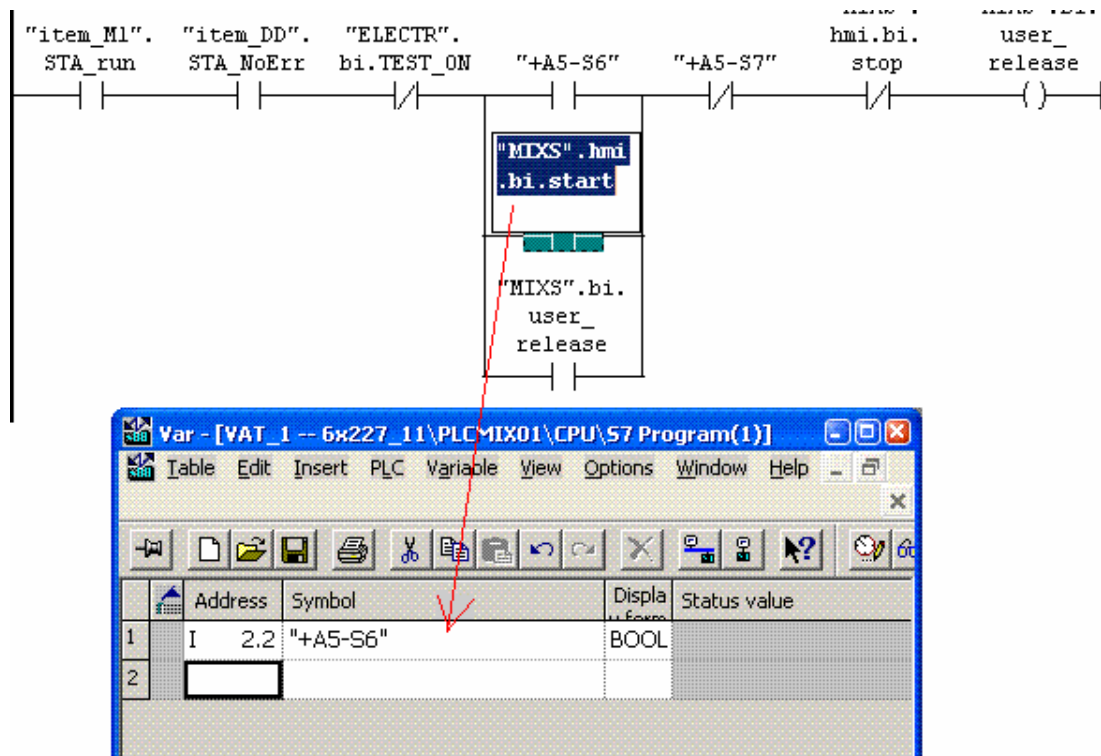
Above: Select an adress, then jump directly to the the STATUSFORCE table and insert the selected adress.

14. Quick Force On and Off of digital i/o.
In the Status/Force view: Select a boolean adress and then force it on and off by means of hot-keys. The current method requires way too many steps by the user. The necessary verification could be enabled before-hand in a separate dialog (i.e. "Quick force enabled" is then displayed in the top of the window).

15. LAD/STL/FBD editor color change for unsaved edits:
(S7Guy) Have the option of setting the color of unsaved changes. Once in a while, it would be nice to quickly review changes before I do a save and download. If they were highlighted in red, it would be a breeze, and would alert me to accidental changes.

16. LAD/STL/FBD editor mark networks with color:
(S7Guy) Have the option of highlighting text. If I am writing some test code, it would be nice to be able to quickly identify it by scrolling through the block. Or, if I made some changes and sent them out to a service guy, I could tell him to open up FC40 and find all changes highlighted in yellow.

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17. LAD/STL/FBD editor automatic suggestion+completion when typing adresses:

(S7Guy) An "Auto Complete" option would be cool, especially for those of us that program symbolically. If I'm using some nested variables where the first 40 characters are always the same, it would be nice for these to automatically show up when I started typing so I only had to add the last part. I can speed things up with a cut and paste, but auto complete would be better.

(Comment JesperMP) There is an option "Automatic Symbol selection (for LAD/FBD)". But there is a problem with it, dont remember which, so I have turned it off. If it worked OK it ought to be easily added to STL. In WinCC Flexible it works well.

(Comment Imi'ike) I would like to type the data block name and then type the period key (or arrow down or something that means select that data block) and then continue typing the element name in order to narrow down the symbol list.

(Comment JesperMP) Now I understand better what S7Guy wants. The more you use structured variables, the more complex the adresses becomes, and the need arises for quick(er) browsing of possible candidates. One problem I remember is that you cannot see the last part of the adress because the screen space reserved by STEP7 is too little. So you may look at two possible candidates, but you cannot know which one is the right one without tediously scrolling to the end of it.

(Comment S7Guy) And just to add more to that, I also want it to work with UDTs. For instance, if I have a UDT in the STAT or Local area, I want that to auto-complete too. And while they are at it, they could filter out invalid data types. If I start the line with "A" or "O", it doesn't need to show me BYTE, INT, DINT, etc variables. Conversely, if I start a line with "L", it doesn't need to show me bool variables.

18. LAD/STL/FBD save even if there are unfinished edits:

(JesperMP) If there is code that will not verify, you will not be allowed to save. So you cannot go home (or drop everything becouse some urgent matter needs attention) before all the code marked with red has been cleared.

19. Cross reference:

(S7Guy) Add some more features to the cross reference list. Right now it's limited to absolute Adresses. But it would be cool to be able to search for constants or local variables or even specific instructions. Right now I can export the program to PDF and create an index that way, but it wouldn't be a stretch to add it to Simatic Manager as well.

20. LAD/STL/FBD macros:

(Werner) For Step 7 It would be nice to have VBA macro's (or something simular) for repeative functions/software.

21. STL, view the nesting level when online:

(flukie) Viewing the level of nesting in STL. In Step 5 this was allready possible!

22. LAD/STL/FBD comment out sections of code:

(flukie) Blok comment/uncomment as in visual basic : select a range of code and then put it as comment or uncomment it.

23. LAD/FBD customize the instructions toolbar:

(im'ike) In the LAD editor, I would like to customize the instructions in the toolbar.

24. LAD/STL/FBD drag-and-drop programming:

(curlyandshemp) How about true Windows GUI style programming, with drag and drop editting.

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25. LAD/FBD autosize font to fit screen:
(curlyandshemp) And the size of a rung in LAD dynamically adjusts to the window size
(comment JesperMP) Not sure what would be the best solution. If you have a large rung, the font could become so small that you couldnt make out the details.
(Imi'ike) I agree that the font could get too small. However, rung wrapping might be a good alternative.
(JesperMP) Personally I would prefer navigation within a rung to be easier so that you could easily move about without using the mouse.
(Imi'ike) Yes, the point is easier rung navigation. If the font auto sized, I would want to disable that. Rung wrapping might be annoying too, but I also find left/right scrolling annoying

26. HW Config, set modules or DP slaves as active/inactive:
(Johan H) I think it would be great if you in a easy way could chose to deactivate some parts of your hardware especially components on Profibus. I usually like to put in all hardware from the beginning to se what I/O they should have and how much it occupies. But often when we are starting the commissioning not all hardware is connected and ready. Then you either have to remove it from the hardware manager or you have to deal with the red led on the PLC and the consequences of that.
In this case it would be perfect to be able to deselect the nodes from being active, but they should still be left in the hardware manager

27. STL online status, grid lines to easily match adress with data:
(S7Guy) You know how in STL you can have grid lines in the status window when online? Well, it would be good if these grid lines extended all the way to the left as well. I use a wide screen laptop, and if the variable name is short, it's sometimes hard to match the name with the status. Or, even better, it would be nice if when I clicked on a variable, it highligted all the way across like in an Excel spreadsheet.
(Comment JesperMP) Yes, I and many others too, drag the status data as far to the left so that they are right next to the variables. Otherwise it can be hard to see.

28. STL. Editor removes labels when it should not.
(Werner) Step7 removes unused jump labels when saving a block. This is very annoying.

29. STL. Renumber labels automatically.
(Werner) When using _001 or _002 jump labels it would be a nice feature to automatically renumber the jump lables. (So the jumps at start of the block, start with _001 and ending with the highest number label)

30. STL. Allow labels longer than 4 characters.
(JesperMP) It is hard to cram something meaningful into 4 characters.

31. Cross reference. Manually mark adresses as used.
(Amr Hassan)it should be a way to manually mark the used bits in the cross reference . sometimes i use a bit in indirect adressing or for somereason the op and i do not want to use it again

32. HW Configuration. Userdefined names for Profibus nodes are hidden.
(S7Guy) In the hardware catalog, I can give a name (Designation) to a profibus node. But, I can't resize the profibus node on the screen, so the name is pointless. I want the ability to resize these.

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33. HW Configuration. Userdefined graphical groups.

(S7Guy) It would be nice if there were some sort of grouping options, where the devices were auto-grouped (like Windows Desktop). Or even better, allow me to assign nodes to my own defined groups that I could move around as a unit to make the screen cleaner and easier to manage. This is purely graphical, and would not affect the actual hardware config.

34. LAD/STL/FBD editor: More instructions should be displayed.

(Imi'ike) When Online with the LAD editor, I would like to see the status of more than just a few of instructions. A whole rung would be a nice start.
(adamjones) How about being able to monitor a entire network while in latter mode.At present you can only see part of a network.

35. LAD/STL/FBD editor. Online update is too slow when changing focus.

(Imi'ike) The update rate is painfully slow. When I move the focus, the update time takes more than a couple of seconds. This makes online debugging awfully slow.

36. LAD/STL/FBD editor. Data should be displayed with the defined symbol type. And the header should be renamed Accumulator1

(Werner) When online you have to select data representation if you have different types of data. This data should by default be viewed as the type it is defined. So a floating point should be represanted as a floating point. An integer as an integer and not hexidecimal or as floating point.
(bobdjones) When displaying online status in STL Accumulator1 column is headed 'STANDARD'. When selecting items to be displayed in the Options>Customize dialog the option to be checked to display Accumulator1 is labelled 'Default Status'.
It would be good if Accumulator1 is actually called Accumulator1 in all windows/menus/displays.

37. LAD/STL/FBD editor. String data cannot be monitored online.

(Werner) It would also be nice that string types could be monitored online. If you now define a DB with data as a STRING[8] format, then online the values remain greyed out.

38. Document hidden commands.

(rdrast) It took three days once of trying to get a simple analog module to accept configuration changes, before a Siemens Tech Support person finally told me to just try hitting some wierd key combination (something like CTRL-ALT-SHIFT-F8), which magically forced the hardware config to work properly.

39. HW Configuration. Only display the catalog entries that can actually be selected in a given position.

(rdrast) Improve hardware selection to only show RELEVANT selections.

40. LAD/STL/FBD editor. Prompt for revision comments.

(rdrast) Option to enforce and require comments for every save, and potentially ever online modification (revision history, logged with workstation name, logged in account, and time/date stamp)

41. Messages (ALARM-S). Very difficult to figure out.

(based on Werner's input). There should be better documentation or quick guides to ALARM-S.

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42. LAD/STL/FBD editor. Breakpoints. Breakpoints are very difficult to figure out.
(based on Werner's and RMA's input). There should be better documentation or quick guides to breakpoints.

43. LAD/STL/FBD editor. Use tabs to access blocks.
(Kataeb). In microwin all subroutines (functions) are viewed like excel sheets giving rapid access to each one.

44. LAD/STL/FBD editor. Customisable fonts and colors for online view.
(RMA) One thing I'ld like to see changed are the default fonts and colours, especially when viewing running code. The defaults work fine on normal CRT monitors, but most modern flat screens don't have anything like the colour purity of even a middle of the road CRT. The net result is that on my new Dell D620 it's almost impossible to distinguish between code which has been run through once and code which is running every cycle - indicated by a bold font.

45. LAD/STL/FBD editor. Add autosave function.
(STL???) OK, Based on tonights disasterous programming session, How about some sort of session restore after PC/Laptop crash/freeze/Power Loss etc Microsoft Office, Firefox etc does it, Hows about Step7?
(Comment JesperMP). This would require that edits that doesn't verify can be saved.

46. LAD/STL/FBD editor. Make it possible to switch 100% between LAD/FBD and STL.
(adamjones) Also you can not convert stl to latter in many instances.

47. STEP7 general. Update quicker to kep up with Windows updates.
(adamjones) Faster upgrades to keep up with operating systems. I found out the other day that you have to stay with windows XP.

48. Drives on Profibus. Very difficult to figure out.
(Kataeb) [..] profibus communication with drives is the one that needs much development. Other suppliers have done a wonderful job on this subject, they have one ladder instruction that contains all process data and network parameters of the drive.

49. FM452 and FM352 Cam Controllers. Very difficult to figure out.
(Kataeb) The fm452 and fm352 modules need much engineering to run. They are very far from plug and play

50. Download. Irritating unnecessary memory warning message.
(Imi'ike) The Simatic Manager download tool could be improved so that it can better determine the actual memory requirements. An annoying warning appears when I when I download a project that is larger than the available free space on the MMC. At first this seems like a good idea - we would not want to download a 65 KB project to ta 64 KB MMC. But when the project is 33 KB, I get the warning "Download (294:38) Possible load memory bottleneck or not enough memory on the memory card." But when the download actually starts, the blocks are loaded one at a time so the only free space you really need is enough for the largest offline block - to use as "swap" space. So, I would like the download tool to look at the offline and online blocks to better determine the actual memory requirements

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51. Breakpoints. Bug.
(RMA) Say you call the sub-program 20 times, the first time through, everything will work as expected, but the next time you click "got to next breapoint", the program will perform the remaining 19 cycles without stopping at the Breakpoint! To get it to stop at the Breakpoint you **must** move the Breakpoint, one program step is enough. So in this situation, it's worth getting into the habit of moving the Breakpoint one line up and down each time you hit the Breakpoint - then everything works fine.

52. LAD/STL/FBD editor. Array Adressing.
(Based on input from PeterW, Peter Nachtwey, Desert Dog) Array indexing is very difficult to figure out. It takes too many steps with building a pointer and it easy to make errors. It is not possible at all to use indexed array adressing in LAD or FBD.
What many ask for is to be able to write simply L #MyArray[#MyIndex] or something similar. STEP7 should then handle all the intricacies behind the scenes. As an acceptable compromise, STEP7 could allow to write the simplified form in LAD or FBD and then the corresponding STL code is generated automatically. Just like the other LAD/FBD code.

53. DB Editor. Go To function.
(Imi'ike) I would like to have the same right click and pop up available in the DB editor [as there is in the LAD/STL/FBD editor] so that I can search for the address without opening the Cross Reference.

54. Printing. Only via default Windows Printer.
(Imi'ike) Simatic Manager Printing: The Print should allow the MS Windows print dialog window to appear so I can select a different printer. If I want to print to a printer other than my default printer, I have to change the default printer in MS Windows before printing from Simatic Manager. This is the only program I have that does this.

55. Profinet/iMap. Allow Structs within Structs.
(10baseT) Profinet allows the connection of PLC's and HMI's over ethernet - briefly , the idea (at least in my application) is to use a common DB that is readable by a control PLC - the coordinator . This DB may only contain one "layer" of nesting - it is not permissable to have a structure inside a structure , and there doesn't seem to be a reason for this .

56. Store the entire project in a single file.
(rdrast) Come up with a real file to store a program in. Dozens of directories within directories isn't it.

57. PLCSIM. Allow the simulated online connection to be Profibus or Ethernet.
At the moment simulation only works via simulated MPI connections. This requires the user to setup dummy MPI connections when you want to test HMI applications.

58. PLCSIM. Syncronise the number of adressable merkers, S5-timers and blocks to what the simulated CPU actually supports.

59. PLCSIM. Simulate more than one PLC at a time.
(Scowl) It will be a quite good to simulate more than one PLC concurrently [..]

60. PLCSIM. Simulate communications.
(Scowl) [… with] simulation of interPLC communications (MPI, Profibus, Ethernet).