

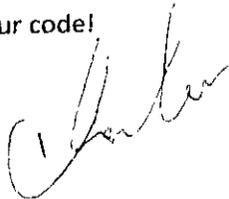
Saturday, September 10, 2011

Hi Al,

Here are some things I took out of the Gemini Programming Manual relative to Detail Math Flows and programming. Thought we should use them on our task!

1. Each column is to start with a letter representing the module mode (R1 .1 stands for Re-entry mode) in column 1, block 1.
2. Each block in a column is to have a number and each equation type block is to show the equivalent units on bottom right corner.
3. The dependent variable scaling is to be shown in the upper right-hand corner of each detailed block.
4. Every constant used on the detailed math flow sheet is to be defined and all constants are to be placed in one group.
5. Every left-hand symbol (LHS) referenced by the operational program is to be shown on the detail math flow.
6. All subroutine entries are to be standardized (see module 4 detailed math flows for the correct examples).
7. All variables are to be subscripted properly in all detailed equations.
8. All detail math flow symbols and program symbols are to be explicitly defined in the Letters and Symbols Specification Document (Al, I guess we need to start a Word Document for this information)
9. KZERO is a constant of all zeros. Use this when it is necessary to have all known zeros.
10. Fast loops (I/O-HOP I/O) must be inserted in the operational program every 35 ms so that the I/O subroutine which takes 15 ms will meet the 50 ms requirement.
11. The DCS and DAS request remains up for only 75ms. So, if the fast I/O loop exceeds the value of 75ms a DAS or DCS request will not be honored.
12. System math flow and detail math flow must be in agreement.
13. The detailed math flows must agree with the corresponding program listing.
14. Each equation in the detailed math flow is to be checked for proper scaling and proper unit assignments.
15. All constants are to be cross checked with the system flight constants and the program listing. Also, check program listing constants with the detailed math flow.
16. The system flight constant list is to be cross referenced to the Letters and Symbols Specification Document.
17. Check to see that all Variables are properly initialized or computed prior to their use in a program.

Another thing I was thinking about is we should always HOP to a subroutine instead of using a Transfer (TEA) since we don't know which sector of memory our program would be assigned relative to where the subroutine is stored. (I know we will not be assembling the program!! But some smart person could be checking our code!



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