

NASA TECH BRIEF



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Visual Task Analysis (VISTA)

The problem:

To develop accurate, standardized scheduling documentation as an element essential to the successful planning of a project. This necessitates a network flow chart which is an indispensable tool for tracking down elusive logical flaws encountered while establishing work flow, for revising original plans and for familiarizing new personnel with the mechanics of task planning.

The solution:

VISTA, a computer system designed to automatically plot selective PERT networks. This automation of plotting networks generates standardized networks due to a priority scheme adopted for calculating paths between events.

How it's done:

VISTA will generate networks from two different sources of input: the output tape of NASA PERT C and parameter cards prepared for the program.

Task analysts initiate the planning cycle of the program by project work definition, breakdown of critical information and network design. The planning network once defined is then coded on source documents for inputting to either NASA PERT C processing or directly to VISTA along with network header cards. After PERT processing is completed, if this option is used, the PERT Successor Sorted file is routed to VISTA where the desired networks are selected according to input Network Header cards for VISTA automatic network drafting. The automatic network displays along with PERT tabular reports are then sent to the user, who revises and modifies the planning network and the cycle is reinitiated.

The direct input mode to VISTA, by-passing PERT, is recommended for small volume networks only. This input mode requires the user to input source data in a form simulating the PERT calculated reports according to certain format specification. This input mode also requires Network Header cards for inputting title information. The generated network plots are returned to the user who modifies the network. Network revisions via the direct VISTA input mode require manual updating.

VISTA is designed to generate network graphics from either input cards or a deblocked PERT Successor file from the NASA PERT C process. It consists of four subprograms. One reads optional files, either the deblocked Successor sorted file from the NASA PERT C process or a manually prepared card input file which contains the necessary data information required to generate a tape simulating the PERT input file. The file is then copied and released for sorting into Predecessor event number sequence. Another subprogram reads the network header cards and selects from the Successor file generated by IN-NET the data records to be plotted. The next subprogram analyzes each network by "looking" at the network schematically and MAPS the event paths by a priority scheme oriented to achieve optional symmetry in the plotted network. The last one takes the mapped file from the last subprogram and through communication with plotting subroutines generates an output file containing all the necessary SC 4020 command to graph the finished VISTA networks.

Notes:

1. This program is written in COBAL and FORTRAN IV Language for use on the IBM 7094 computer. Plotting is done on a SC 4020 CRT plotter.

(continued overleaf)

2. Users of VISTA should have a basic knowledge of NASA PERT C as outlined in the NASA PERT C Computer Systems Manual, and the Operating Instructions, Launch Systems Branch S-IC NASA /PERT System.

3. Inquiries concerning this innovation may be directed to:

COSMIC
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Reference: B69-10394

Patent status:

No patent action is contemplated by NASA.

Source: Arnold Kelly, Tom Burkes,
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