SRL VOYAGER DATA PROCESSING PROGRAMS

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Voyager data processing programs fall into three main categories according to their functions which are: to compress "raw" data into a more manageable and useful form, to scientifically process this data, and to display the results.

Programs of the "merge-squeeze" variety operate on either "raw" data tapes or other merge-squeeze tapes. "Raw" data is here defined as tape data which CIT receives from the Jet Propulsion Laboratory and Goddard Space Flight Center. JPL provides EDR (Experiment Data Record) tapes, which contain encoded instrument data in telemetry format and information pertinent to its acquisition, and SEDR tapes which also include spacecraft navigation data. Encyclopedia tapes from GSFC contain decoded events and rates averaged over 15 minute intervals and instrument status in a more organized structure. The merge-squeeze programs are summarized below:

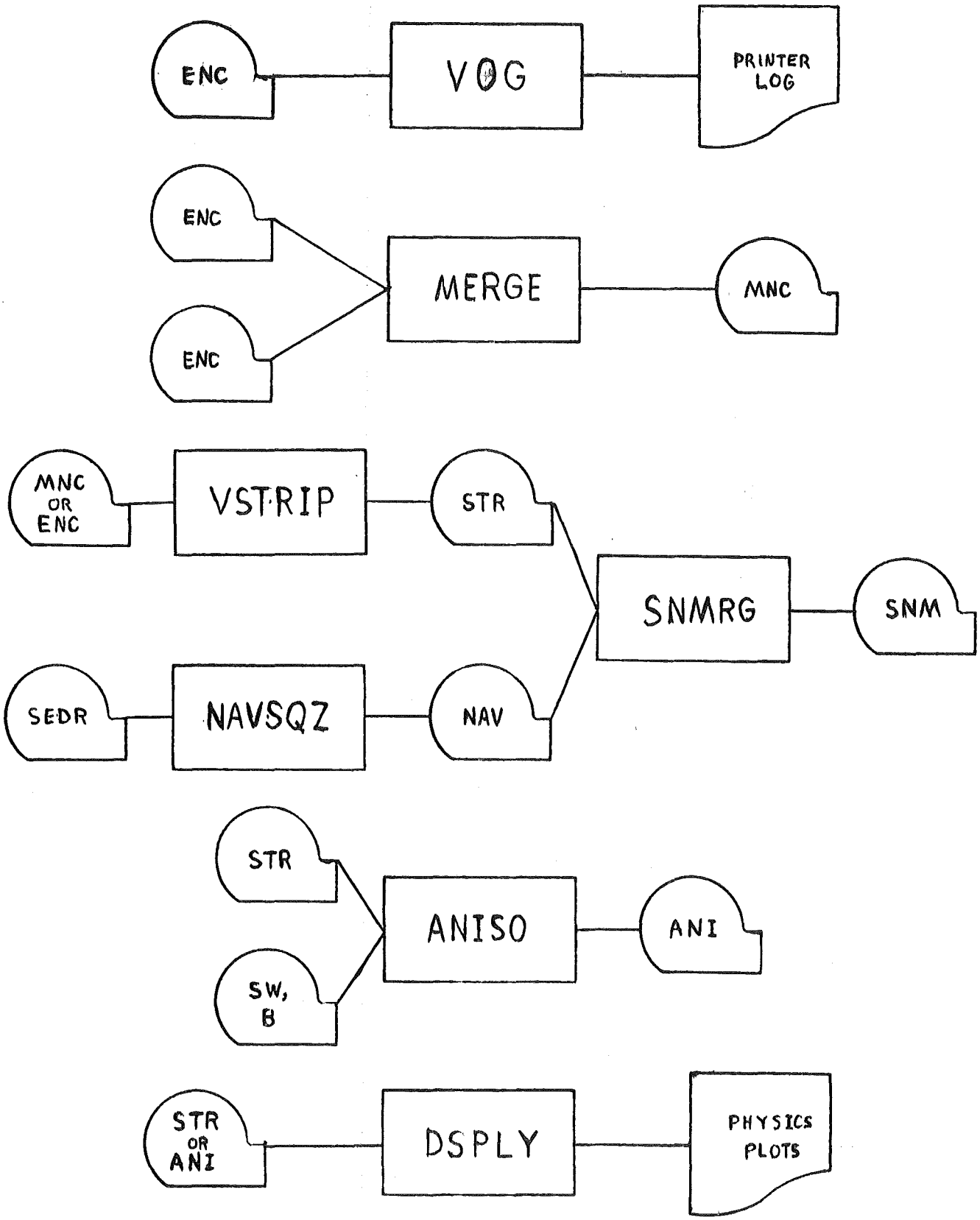
Program	Function
VOG	Voyager log. Scan encyclopedia tapes, noting gaps and instrument changes.
MERGE	Merge encyclopedia tapes into a time ordered sequence.
VSTRIP	Voyager strip. Scan encyclopedia or merge tapes, selecting and averaging rates and events of specified types.
NAVSQZ	Navigation squeeze. Read Voyager navigation data from SEDR tapes and compress into IBM370 and PDP-11 formats.
SNMRG	Strip/Navigation merge. Writes tapes containing navigation and STRIP data for specified intervals.

An example of the scientific data processing programs is ANISO, which further compresses data by averaging over a number of STRIP tape intervals. ANISO is specifically designed to calculate particle streaming (anisotropy), but its general structure may be of interest to those who wish to average data over long periods to study other problems.

Display of STRIP or ANISO data is currently accomplished using DSPLY, a FORTH program which utilizes the HP-2648 graphics terminal for plotting and Versatec plotter for hard copy. DSPLY is a fairly general program to read and plot tape data and is typically incorporated in larger FORTH programs designed to suit specific needs.

The formats of the tapes produced and used by the various programs may be found in the documentation listed below:

Name	Abbrev.	Source	Document
EDR	EDR	JPL	Voyager 618-306
SEDR	SEDR	JPL	SIS 4-7008-1,Rev.b
Encyclopedia	ENC	GSFC	Library Organization
Merged encyc.	MNC	CIT	Library Organization
Navigation	NAV	CIT	NAVSQZ program
Strip	STR	CIT	CRS STRIP program, SRL Tech. Rep. 78-3
STR/NAV merge	SNM	CIT	NAVSQZ,STRIP progs.
Anisotropy	ANI	CIT	none, see T. Garrard
Solar wind	SW	MIT	none, see A. Cummings or T. Garrard
Magnetic field	B	GFSC	none, see A. Cummings or T. Garrard



ENC – Encyclopedia tape
MNC – Merged encyclopedia tape
SW – Solar wind tape
B – Magnetic field tape
SNM – Strip/Navigation merge tape
STR – Strip tape
ANI – Anisotropy tape