

KAMPSAX Spacelab

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Title: Monitor Table - and CSD Skeleton Generation
Syntax based on Requirements in SS-ER-0069

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col = Collocated Personnel.

Abbrev.: d = destroyed. arc = archives.

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TITLE : Monitor Table - and CSD Skeleton Generation
Syntax based on requirements in SS-ER-0069

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1. Introduction

This TN describes the input syntax to be used when generating monitor tables and CSD Skeletons.

The syntax is described by means of HAL/S syntax diagrams followed by an additional general description.

It is assumed that defining the monitoring of health check data and asynchronous data is covered by the given syntax.

KAMPSAX

Spacelab

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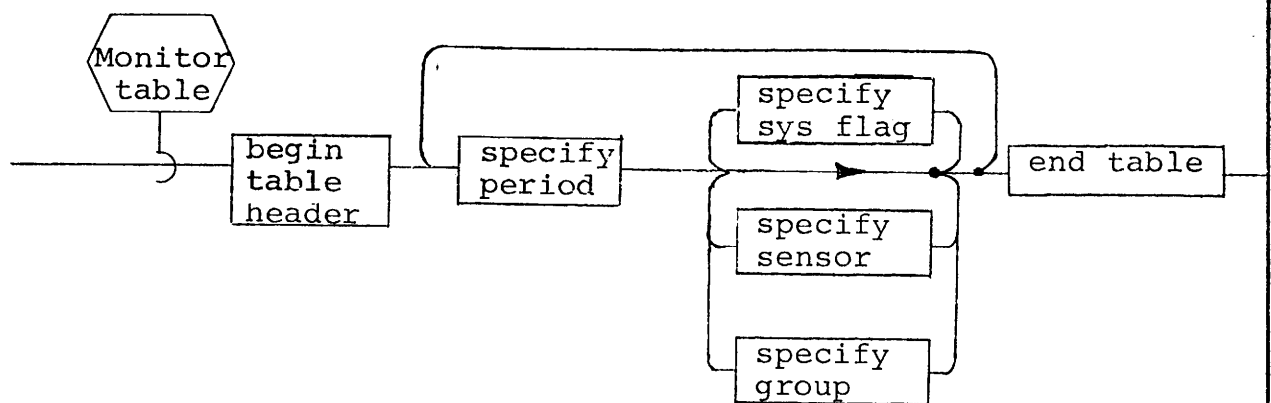
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2. Related Documents

SS-ER-0069 EGSE computer software issue no. 1
date 18.01.78

3.0 Monitor Table Definition

The monitor tables are prepared off line by MOTGEN from an input file which consists of card images in following syntax.

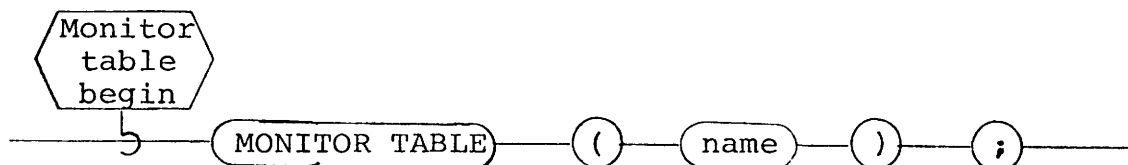


Comment

- a) The "begin- and end table" encloses the monitor table i.e. the list of sensors to be monitored.
- b) The contents in the monitor table i.e. the sensors (single or group), or system flags to be monitored, and the expected states and the monitoring frequency for these, is defined in between the "begin- end table".
- c) Comment's are allowed, and can be used everywhere, they have to be surrounded by "/X".
e.g.: /X THIS IS A COMMENT X/
- d) The table organisation will correspond to the input card sequence, in order to minimize the conversion effort.

3.1 The Begin Table Header Statement

This statement indicates the beginning of the monitor table.

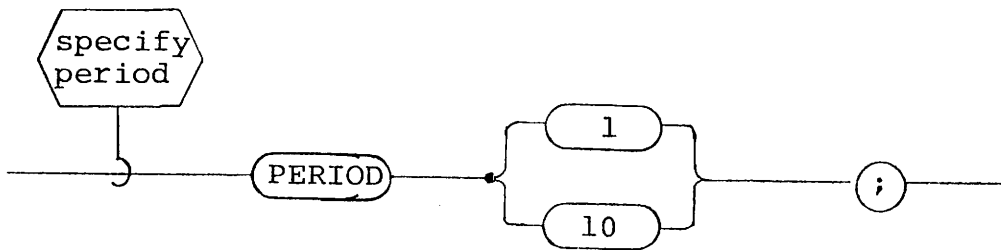


Comment:

- a) The statement must be the first statement.
- b) Name, is the table name to be used when loading this table.
- c) Table name is 1 to 4 characters.

3.2 The specify period statement

The statement specifies the time period between monitoring of a given end item.

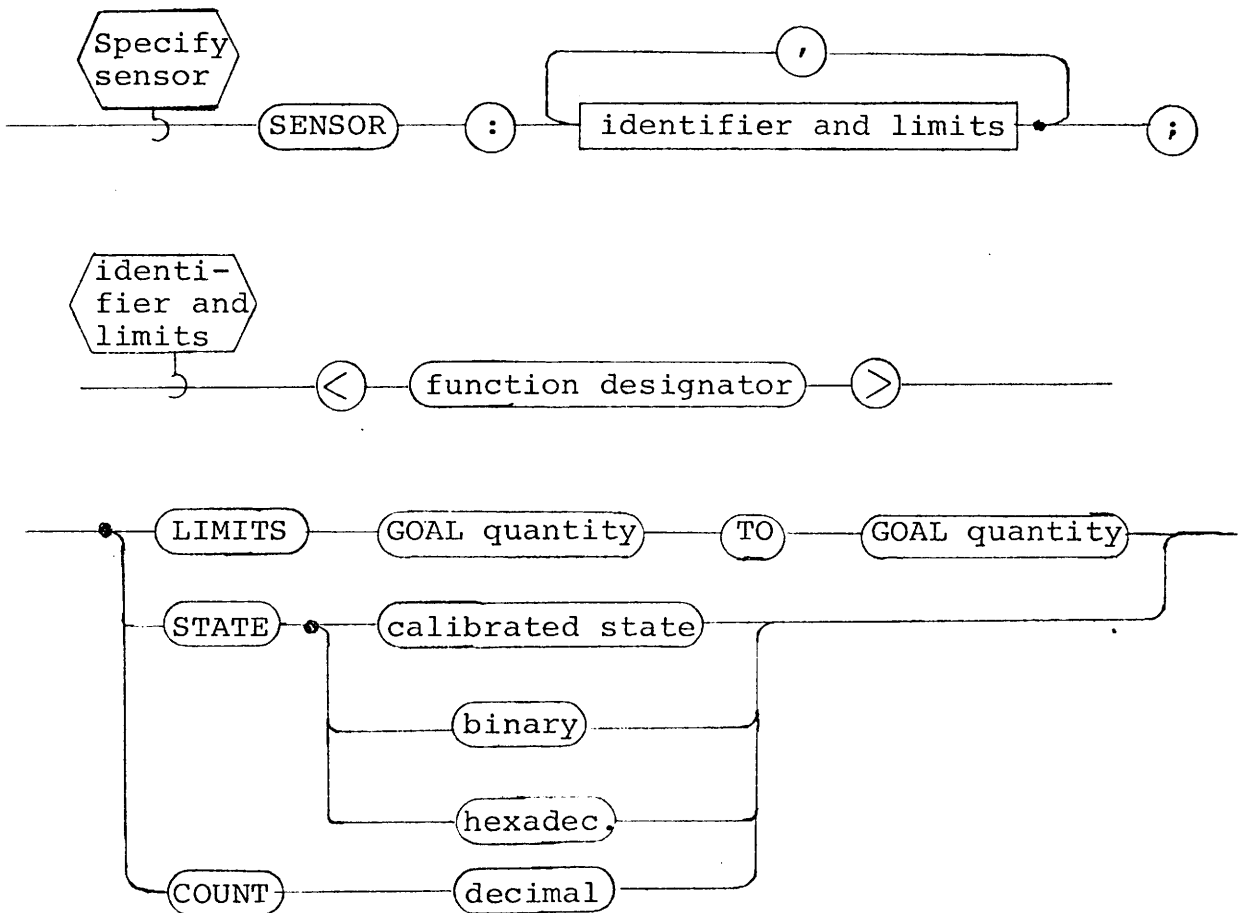


Comment:

- a) the period is in second's i.e. 1 sec. and 10 sec.

3.3 The Specify Sensor Statement

This statement specifies the sensors, which are not part of a group, and the limits against which the sensor readings shall be monitored.



Comment:

- a) Function designator (FD) is either of sensor type in CDT or a system flag.
- b) The FD given must be the measurement name (long form) or id no as in CDT when sensor type, or the flag number 'FLAG-X' when system flag, (see 3.5).

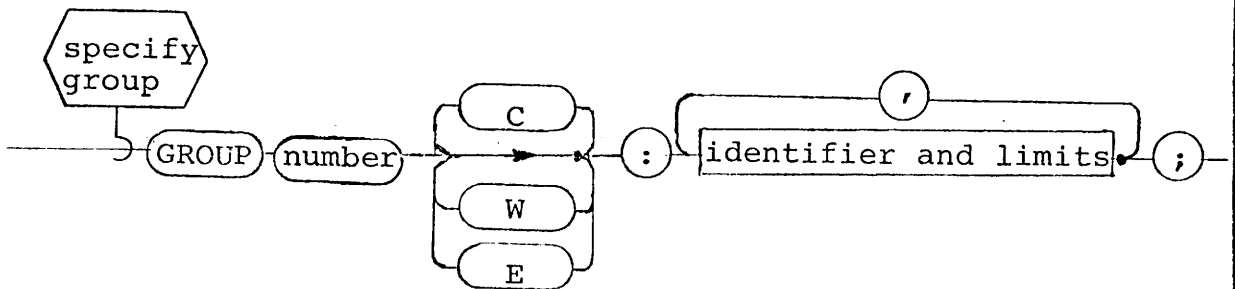
- c) LIMITS, only to be used with analog sensors.
 - c.1) GOAL quantity is the calibrated value for the low and high limit to be used, supplied in eng. unit corresponding to the unit for the sensor.
 - c.2) The difference between low and high limits must, when converted to raw be greater than or equal to 1.

- d) STATE, only to be used with a system flag or sensor type discrete or group discrete.
 - d.1) When system flag, calibrated state can be either ON or OFF, with the corresponding binary value "1" or "0" respectively.
 - d.2) When single discrete and group discrete, state has to be compatible with the state type in CDT, or numeric according to the number of bits in the sensor.
 - d.3) Single discrete states are: ON, OFF, OPEN, CLOSED, WET, DRY, TRUE or FALSE and numeric "1" or "0".
 - d.4) Group discrete states are numeric either binary or hexadecimal. The value according to the number of bits in the sensor (2 to 16).

- e) COUNT, only to be used with counters e.g. TLM error rate counters.

3.4 The Specify Group Statement

This statement specifies the grouping of sensors, which have to be handled "group-wise", and the related priority.

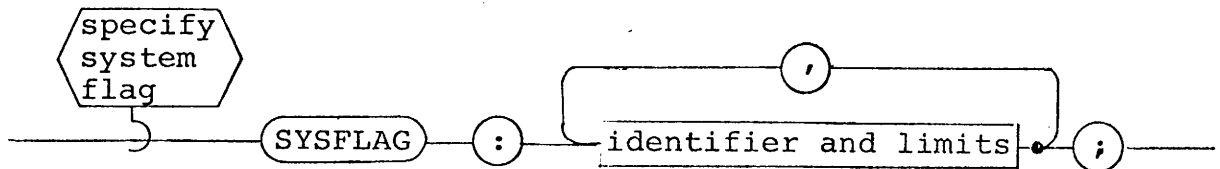


Comment:

- a) Group number must be between 1 and 50.
- b) Identifier and limits, as defined under "specify sensor statement".
- c) Priority code from low to high, C - caution, W - warning, E - emergency. The priority code is optional, and default is that the group is a normal group.

3.5 The Specify System Flag Statement

This statement specifies the system flags to be monitored and the expected state used in the comparison.



Comment:

- a) Identifier and limits, as defined under "specify sensor statement", discrete sensor.

3.6 The End Table Statement

This statement indicates the end of a monitor table.



Comment:

- a) This must be the last statement for the table.
- b) It may be followed by another table.

3.7 Example of Monitor Table Definition

MONITOR TABLE (TOD123);

PERIOD 1;

SENSOR:

<SPACELAB BUS C > LIMITS 4.5 TO 5.1 V,
<AUXIL-A SUPPLY > LIMITS 15 TO 20 AMP,
<EPDB 1 > STATE OFF,
<EPDB 2 > STATE OFF,
<TLM-SS > COUNT 16;

GROUP 1:

<SCCD - WORD 32 > STATE 101011,
<PRIMARY SUPPLY VOLT > LIMITS 18 TO 24 V,
<PRIMARY SUPPLY CURR > LIMITS 3 TO 5 AMP,
<PRIMARY SUPPLY > STATE ON;

PERIOD 10;

GROUP 2 W:

<SS-INVERTER INPUT > LIMITS 4.0 TO 5.0 V,
<SS-INVERTER OUTPUT A > LIMITS 24 TO 28 V,
<SS-INVERTER > STATE ON;

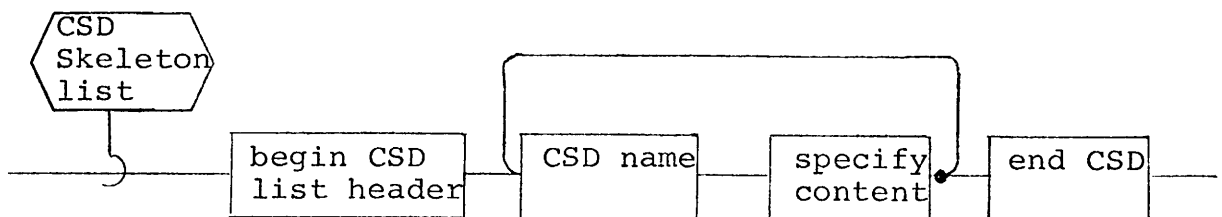
SYSFLAG:

<FLAG-2 > STATE ON,
<FLAG-3 > STATE OFF,
<FLAG-4 > STATE OFF,
<FLAG-5 > STATE OFF;

END MONITOR;

4.0 Current Status Display Definition

The current status display skeletons (CSD) are generated off line from an input file which consist's of card images in following syntax.

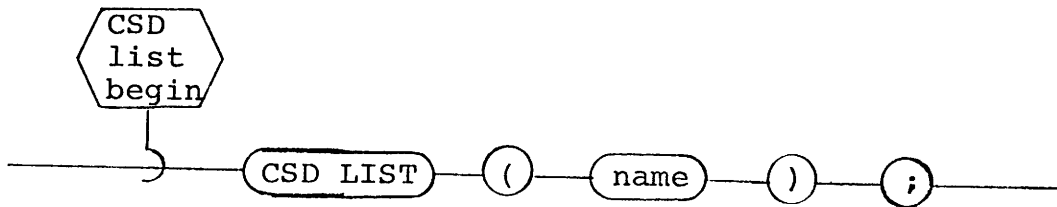


Comment:

- a) The "begin - end CSD" encloses the CSD list i.e. the collection of CSD skeleton's to be loaded to disc.
- b) The name of each CSD, in the list, and the content to be on this CSD is defined in between the "begin - end CSD".
- c) Comment's are allowed, see 3.0.
- d) The organisation of the entries in the CSD list and on each CSD skeleton will correspond to the input card sequence, in order to minimize the conversion effort.

4.1 The Begin CSD List Header Statement

This statement indicates the beginning of the CSD list.

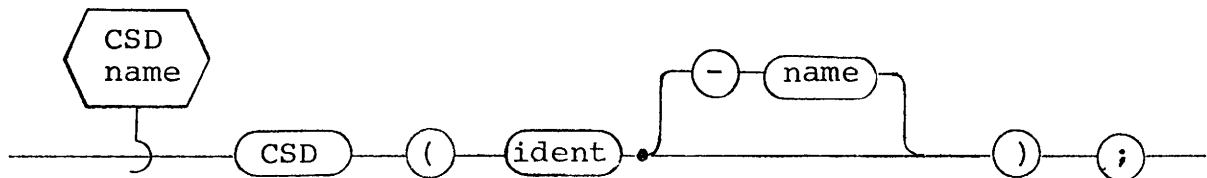


Comment:

- a) The statement must be the first statement.
- b) Name, is the list name to be used when loading the collection of CSD skeletons to disc.
- c) List name is 1 to 4 characters.

4.2 The CSD Name Statement

This statement specifies the name of the CSD Skeletons to be used in the CSD list.

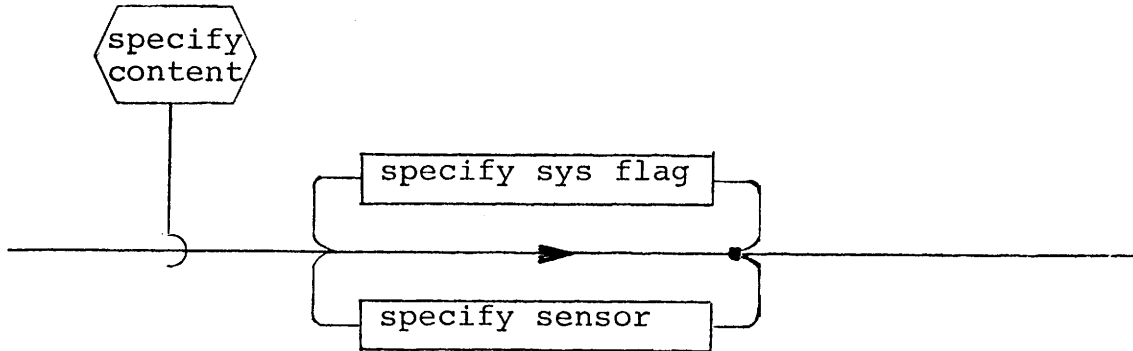


Comment:

- a) Ident, is the identification to be used when calling this CSD to the screen. It must be 1 to 4 characters.
- b) Name, is the name of the CSD, it must be 1 to 11 characters.
- c) Name is optional, and default is blanks.

4.3 The Specify Content Statement

This statement defines the sensor's and system flags to be on a CSD skeleton.

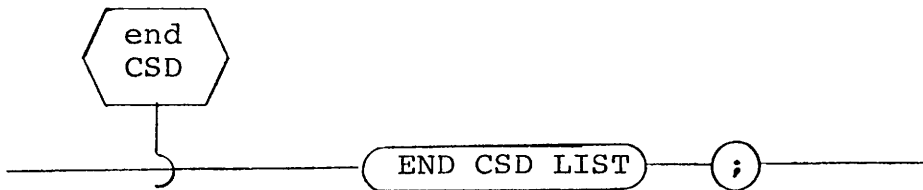


Comment:

- a) The syntax for each specify statement is as for monitor table syntax, as described in sec. 3.3 and 3.5.

4.4 The End CSD Statement

This statement indicates the end of a CSD list.



Comment:

- a) This must be the last statement for the CSD list.
- b) It may be followed by another list.

4.5 Example of CSD Skeleton Definition

CSD LIST (TOD117);

CSD (9999 - PW DISTRBUT);

SENSOR:

<EPDB 2 DC 21 OUTPUT> STATE ON,
<EPDB 2 DC 22 OUTPUT> STATE OFF,
<EPDB 2 DC INPUT> LIMITS 2 TO 5 AMP,
<EPDB 1 DC 11 OUTPUT > STATE ON,
<EPDB 1 DC INPUT > LIMITS 1 TO 4.5 AMP,
<EPDB 1 AC PH,A INPUT > LIMITS 0.5 TO 1 AMP,
<EPDB 1 AC PH,B INPUT > LIMITS 0.5 TO 1 AMP,
<EPDB 1 AC PH,C INPUT > LIMITS 0.5 TO 1 AMP;

SYSFLAG:

<FLAG - 1 > STATE OFF,
<FLAG - 2 > STATE ON,
<FLAG - 3 > STATE ON;

CSD (0001 - EV SS CONT);

SENSOR:

<ECS AC1 PH,A > LIMITS 15 TO 20 AMP,
<ECS AC1 PH,B > LIMITS 15 TO 20 AMP,
<ECS AC1 PH,C > LIMITS 15 TO 20 AMP;

SYSFLAG:

<FLAG - 5 > STATE ON;

END CSD LIST;