The SPD Configuration Database Schema

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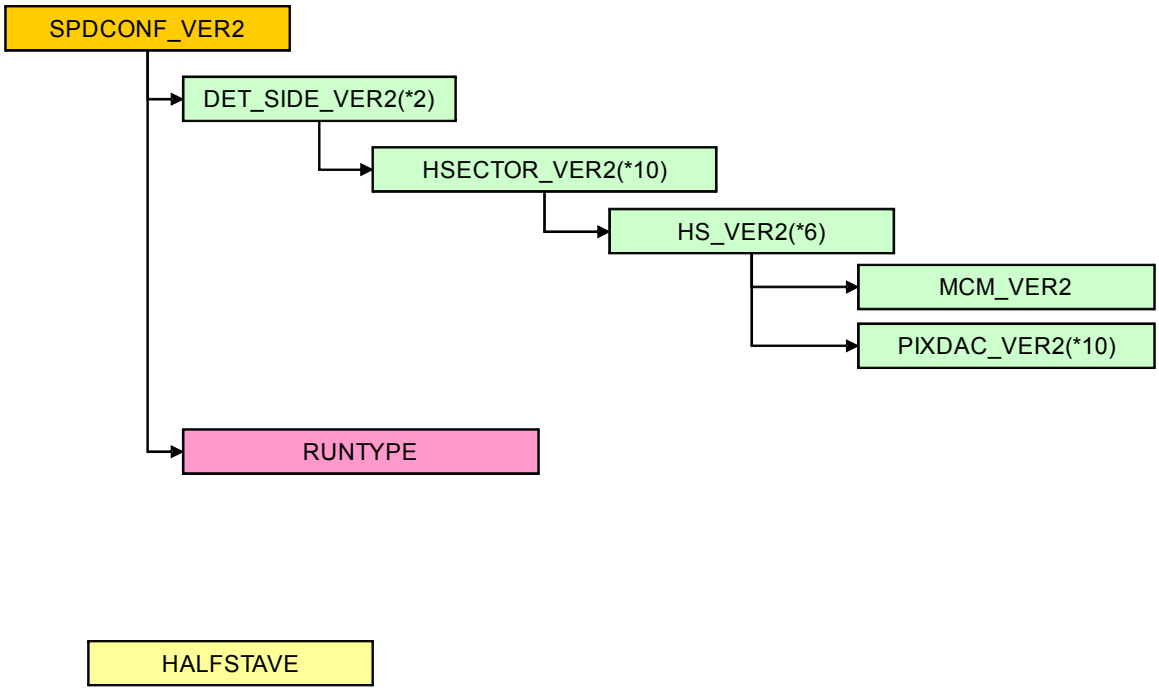
1 SPD Global Schema Diagram

The SPD configuration database uses is a versioned schema following the detector hierarchy. So we have a top level table called SPDCONF_VER2 which points to 2 rows in a detector side version table (DET_SIDE_VER2) each one of these pointing to 10 rows in a half sector versions table (HSECTOR_VER2) each one pointing to 6 halfstave version (HS_VER2) each one of these point to one MCM (MCM_VER2) configuration version and 10 pixel DAC versions (PIXDAC_VER2) .



The versioning is managed automatically by the SPD FED server and its defined in a generic class called "SpdVerTable".

The only tables containing real configuration data are the MCM_VER2 and the PIXDAC_VER2 tables, all other tables just contain pointers to data. A change in one these will trigger a new halfstave configuration version which will trigger a new half sector version which triggers a new side version which will finally trigger a new SPD global version.

2 List of Tables Definitions

2.1 Top Level Table (SPDCONF_VER2)

Top level configuration table. Keeps the user name and comment for this configuration and points to 2 side versions, one for each FED server.

SPDCONF_VER2	Top Level SPD Configuration table	
SPDCONF_VER	NUMBER(9)	Version number
DET_SIDEA_VER	NUMBER(9) NOT NULL	Points to the side A configuration version
DET_SIDEC_VER	NUMBER(9) NOT NULL	Points to the side C configuration version
USER_NAME	VARCHAR(100)	User name that created the version
USER_COMMENT	VARCHAR(500)	Comment for this version
RUNTYPE	NUMBER(3) NOT NULL	What run type it applies to
CREATED	DATE	Date when it was created (trigger in the DB)
primary key (spdconf_ver) validate		

2.2 Detector Side Table (DET_SIDE_VER2)

Detector side version. This contains the configuration for one FED server, points to 10 half-sector versions

DET_SIDE_VER2	top level table for detector side configuration (fed servers)	
DET_SIDE_VER	NUMBER(9)	Version number of this row
HSECTOR_VER0	NUMBER(9) NOT NULL	Points to the Sector 0 version
HSECTOR_VER1	NUMBER(9) NOT NULL	Points to the Sector 1 version
HSECTOR_VER2	NUMBER(9) NOT NULL	Points to the Sector 2 version

HSECTOR_VER3	NUMBER(9) NOT NULL	Points to the Sector 3 version
HSECTOR_VER4	NUMBER(9) NOT NULL	Points to the Sector 4 version
HSECTOR_VER5	NUMBER(9) NOT NULL	Points to the Sector 5 version
HSECTOR_VER6	NUMBER(9) NOT NULL	Points to the Sector 6 version
HSECTOR_VER7	NUMBER(9) NOT NULL	Points to the Sector 7 version
HSECTOR_VER8	NUMBER(9) NOT NULL	Points to the Sector 8 version
HSECTOR_VER9	NUMBER(9) NOT NULL	Points to the Sector 9 version
CREATED	DATE	Date when it was created (updated by a trigger in the DB)
primary key (det_side_ver) validate		
foreign key (hsector_ver9) references hsector_ver2 (hsector_ver) validate		

2.3 Half Sector Table (HSECTOR_VER2)

Half sector configuration version, point to 6 half-stave versions

HSECTOR_VER2	table for a sector with pointers for the 6 hs configurations	
HSECTOR_VER	NUMBER(9)	Version of this row
HS_VER0	NUMBER(9) NOT NULL	Points to HS 0 configuration
HS_VER1	NUMBER(9) NOT NULL	Points to HS 1 configuration
HS_VER2	NUMBER(9) NOT NULL	Points to HS 2 configuration
HS_VER3	NUMBER(9) NOT NULL	Points to HS 3 configuration
HS_VER4	NUMBER(9) NOT NULL	Points to HS 4 configuration

HS_VER5	NUMBER(9) NOT NULL	Points to HS 5 configuration
CREATED	DATE	
primary key (hsector_ver) validate		
foreign key (hs_ver5) references hs_ver2 (hs_ver) validate		

2.4Halfstave Table (HS_VER2)

Half-stave configuration version, points to one MCM configuration version and to 10 pixel DAC configurations.

HS_VER2	general hs configuration version points to one MCM configuration and to 10 pixel DAC configurations	
HS_VER	NUMBER(9)	Version of this row
MCM_VER	NUMBER(9) NOT NULL	Points to one MCM version
DAC_VER0	NUMBER(9) NOT NULL	Points to pixel dac version for chip 0
DAC_VER1	NUMBER(9) NOT NULL	Points to pixel dac version for chip 1
DAC_VER2	NUMBER(9) NOT NULL	Points to pixel dac version for chip 2
DAC_VER3	NUMBER(9) NOT NULL	Points to pixel dac version for chip 3
DAC_VER4	NUMBER(9) NOT NULL	Points to pixel dac version for chip 4
DAC_VER5	NUMBER(9) NOT NULL	Points to pixel dac version for chip 5
DAC_VER6	NUMBER(9) NOT NULL	Points to pixel dac version for chip 6
DAC_VER7	NUMBER(9) NOT NULL	Points to pixel dac version for chip 7
DAC_VER8	NUMBER(9) NOT NULL	Points to pixel dac version for chip 8
DAC_VER9	NUMBER(9) NOT NULL	Points to pixel dac version for chip 9
NOISYPIX_VER	NUMBER(9) NOT NULL	Points to one noisy pixel version (not

		used)
CREATED	DATE	Date when this row was created
primary key (hs_ver) validate		
foreign key (noisypix_ver) references noisypix_ver2 (noisypix_ver) validate		

2.5 Noisy Pixel Table (NOISYPIX_VER2)

Noisy pixel configuration version (not in use any more). Keeps the mask to be applied to one half-stave.

Data format of noisyvec:" #<column1>,<row1>|<column2>,<row2>|...|<column n>,<row n>|"

e.g. : #28,0|28,1|28,2|28,3|28,4|28,5|28,6|

NOISYPIX_VER2	noisy pixel data (one per hs)	
NOISYPIX_VER	NUMBER(9)	Version of this row
NOISYCOUNT0	NUMBER(4)	Number of noisy pixels in chip 0
NOISYVECT0	VARCHAR(4000)	String containing noisy pixels for chip 0
NOISYCOUNT1	NUMBER(4)	Number of noisy pixels in chip 1
NOISYVECT1	VARCHAR(4000)	String containing noisy pixels for chip 1
NOISYCOUNT2	NUMBER(4)	Number of noisy pixels in chip 2
NOISYVECT2	VARCHAR(4000)	String containing noisy pixels for chip 2
NOISYCOUNT3	NUMBER(4)	Number of noisy pixels in chip 3
NOISYVECT3	VARCHAR(4000)	String containing noisy pixels for chip 3
NOISYCOUNT4	NUMBER(4)	Number of noisy pixels in chip 4
NOISYVECT4	VARCHAR(4000)	String containing noisy pixels for chip 4
NOISYCOUNT5	NUMBER(4)	Number of noisy pixels in chip 5

NOISYVECT5	VARCHAR(4000)	String containing noisy pixels for chip 5
NOISYCOUNT6	NUMBER(4)	Number of noisy pixels in chip 6
NOISYVECT6	VARCHAR(4000)	String containing noisy pixels for chip 6
NOISYCOUNT7	NUMBER(4)	Number of noisy pixels in chip 7
NOISYVECT7	VARCHAR(4000)	String containing noisy pixels for chip 7
NOISYCOUNT8	NUMBER(4)	Number of noisy pixels in chip 8
NOISYVECT8	VARCHAR(4000)	String containing noisy pixels for chip 8
NOISYCOUNT9	NUMBER(4)	Number of noisy pixels in chip 9
NOISYVECT9	VARCHAR(4000)	String containing noisy pixels for chip 9
CREATED	DATE	Date when this row was created
primary key (noisypix_ver) validate		

2.6 Pixel DACs Table (PIXDAC_VER2)

Table containing the configuration of all 44 DACS of one pixel chip

PIXDAC_VER2	Contains all 44 DAC values for one chip. there are can be 10 lines per halfstave
PIXDAC_VER	NUMBER(9) NOT NULL
DIS_BIASTH	NUMBER(3) NOT NULL
DIS_VCASD4	NUMBER(3) NOT NULL
DIS_VCASD21	NUMBER(3) NOT NULL

DIS_VIBCOMP	NUMBER(3) NOT NULL
DIS_VIBIASCARD	NUMBER(3) NOT NULL
DIS_VIDISC	NUMBER(3) NOT NULL
DIS_VREF2DIS	NUMBER(3) NOT NULL
EU_VBIAS	NUMBER(3) NOT NULL
EU_VBN	NUMBER(3) NOT NULL
EU_VBNBUFFER	NUMBER(3) NOT NULL
EU_VBNBUSLATCH	NUMBER(3) NOT NULL
EU_VBNG	NUMBER(3) NOT NULL
EU_VBNLHCB	NUMBER(3) NOT NULL
EU_VBPPULLDOWN	NUMBER(3) NOT NULL
FAST_CGPOL	NUMBER(3) NOT NULL
FAST_CGPOLFM	NUMBER(3) NOT NULL
FAST_COMPREF	NUMBER(3) NOT NULL
FAST_CONVPOL	NUMBER(3) NOT NULL
FAST_CONVPOLFM	NUMBER(3) NOT NULL
FAST_FMPOL	NUMBER(3) NOT NULL
FAST_FOPOL	NUMBER(3) NOT NULL
KEN_EOCVBN	NUMBER(3) NOT NULL
KEN_VBN	NUMBER(3) NOT NULL
KEN_VBNM	NUMBER(3) NOT NULL

KEN_VBNS	NUMBER(3) NOT NULL
KEN_VBUFFVBN	NUMBER(3) NOT NULL
PRE_VI1	NUMBER(3) NOT NULL
PRE_VI2	NUMBER(3) NOT NULL
PRE_VI3	NUMBER(3) NOT NULL
PRE_VI4	NUMBER(3) NOT NULL
PRE_VI5	NUMBER(3) NOT NULL
PRE_VIFB	NUMBER(3) NOT NULL
PRE_VIPREAMP	NUMBER(3) NOT NULL
PRE_VREF1	NUMBER(3) NOT NULL
PRE_VREF2	NUMBER(3) NOT NULL
PRE_VREF3	NUMBER(3) NOT NULL
PRE_VREF4	NUMBER(3) NOT NULL
PRE_VREF5	NUMBER(3) NOT NULL
PRE_VREF6	NUMBER(3) NOT NULL
PRE_VTH	NUMBER(3) NOT NULL
VAL_BUFFIN	NUMBER(3) NOT NULL
VAL_BUFFOUT	NUMBER(3) NOT NULL
DELAY_CONTROL	NUMBER(3) NOT NULL
MISC_CONTROL	NUMBER(3) NOT NULL
CREATED	DATE

primary key (pixdac_ver) validate

2.7 MCM Table (MCM_VER2)

Table containing the configuration settings of one MCM.

MCM_VER2	mcm configuration data, one line per hs
MCM_VER	NUMBER(9)
DPI_WAITBEFROW	NUMBER(1) NOT NULL
DPI_SEBMEB	NUMBER(1) NOT NULL
DPI_MASKCHIP	NUMBER(4) NOT NULL
DPI_EVENTNUMBER	NUMBER(4) NOT NULL
DPI_STROBELENGHT	NUMBER(2) NOT NULL
DPI_HOLDROW	NUMBER(1) NOT NULL
DPI_SKIPMODE	NUMBER(1) NOT NULL
DPI_TDO8TDO9	NUMBER(1) NOT NULL
DPI_ENABLECESEQ	NUMBER(1) NOT NULL
DPI_DATAFORMAT	NUMBER(1) NOT NULL
API_DACREFHI	NUMBER(3) NOT NULL
API_DACREFMID	NUMBER(3) NOT NULL
API_GTLREFA	NUMBER(3) NOT NULL
API_GTLREFD	NUMBER(3) NOT NULL
API_ANTESTHI	NUMBER(3) NOT NULL

API_ANTESTLOW	NUMBER(3) NOT NULL
GOL_CONFIG0	NUMBER(3) NOT NULL
GOL_CONFIG1	NUMBER(3) NOT NULL
GOL_CONFIG2	NUMBER(3) NOT NULL
GOL_CONFIG3	NUMBER(3) NOT NULL
CREATED	DATE
primary key (mcm_ver) validate	