Global Muon Trigger Status

Ivan Mikulec HEPHY Vienna

CMS Trigger meeting 20 June 2006

HW status / Integration

- All input connections (PSB, DTTF, CSCTF, RPC) tested in 904 before April.
- During May: GMT-GT connection has been tested in 904. Data has been transferred from GMT input chips to GTL and also to FDL module. A small adjustment in the GMT sorter chip fw was needed. GMT latency changed from 9.5 bx to 10 bx. Connection now fully working.
- Second GMT (in Vienna): All problems with loading fw have been solved.
- Improvements in the mechanical stability of the GMT were applied to the module at CERN.
- GMT still in 904 but can move to P5 at any time.

Online SW status / Integration

- GMT can now be configured using the Trigger Supervisor and the Database (Tobias Nöbauer). This is the most important step towards the TS MTCC demonstrator.
- The GMT configuration database is evolving and being filled with contents.
- Additional functionality will be added to allow standalone tools to optionally use the database information.
- Needs of the CMSSW emulator are being taken into account in preparing the Database scheme.



I. Mikulec: GMT status

Updated Database scheme

GMT_FIRMWARE

KEY VARCHAR2(32) NOT NULL (PK) CHIP VARCHAR2(3) NOT NULL FW_ID NUMBER(10) NOT NULL FW_REV DATE(7) NOT NULL FW_REV NUMBER(10) NOT NULL BASE_URL_HTTP VARCHAR2(512) NOT NULL RELATIVE_URL_JAL VARCHAR2(512) NOT NULL RELATIVE_URL_JAL VARCHAR2(512) NOT NULL RELATIVE_URL_BYTEBLASTER VARCHAR2(512) NULL DESCRIPTION VARCHAR2(512) NULL

GMT_AUX_LUTS

KEY VARCHAR2(32) NOT NULL (PK) BASE_URL_HTTP VARCHAR2(512) NOT NULL MIAUEtaConv VARCHAR2(512) NULL MIAUPhiPro1 VARCHAR2(512) NULL MIAUPhiPro2 VARCHAR2(512) NULL MIAUEtaPro VARCHAR2(512) NULL GMT_SOFTWARE_CONFIG VARCHAR2(32) NOT NULL (FK) DESCRIPTION VARCHAR2(512) NULL

GMT_LFX_LUTS

KEY VARCHAR2(32) NOT NULL (PK) BASE_URL_HTTP VARCHAR2(512) NOT NULL LFM atchQual VARCHAR2(512) NULL LFCOUDeltaEta VARCHAR2(512) NULL LFOvIEtaConv VARCHAR2(512) NULL LFEtaConv VARCHAR2(512) NULL LFMergeRankPtQ_VARCHAR2(512) NULL LFPhiProEtaConv VARCHAR2(512) NULL LFSortRankEtaQ_VARCHAR2(512) NULL LFSortRankPtO_VARCHAR2(512) NULL LFSortRankEtaPhi VARCHAR2(512) NULL LFSortRankCombine VARCHAR2(512) NULL LFDeltaEta VARCHAR2(512) NULL LFPtMix VARCHAR2(512) NULL LFMergeRankEtaQ_VARCHAR2(512) NULL LFMergeRankEtaPhi VARCHAR2(512) NULL LFMergeRankCombine VARCHAR2(512) NULL LFDisableHot VARCHAR2(512) NULL LFPhiPro VARCHAR2(512) NULL GMT_SOFTWARE_CONFIG_VARCHAR2(32) NOT NULL (FK) DESCRIPTION VARCHAR2(512) NULL

GMT_CONFIG

KEY VARCHAR2(32) NOT NULL (PK) INB_FW_KEY_VARCHAR2(32) NOT NULL (FK) INB_REG_KEY_VARCHAR2(32) NOT NULL (FK) INC_FW_KEY_VARCHAR2(32) NOT NULL (FK) INC_REG_KEY_VARCHAR2(32) NOT NULL (FK) IND_FW_KEY_VARCHAR2(32) NOT NULL (FK) IND_REG_KEY_VARCHAR2(32) NOT NULL (FK) INF_FW_KEY_VARCHAR2(32) NOT NULL (FK) INF_REG_KEY_VARCHAR2(32) NOT NULL (FK) AUF_FW_KEY VARCHAR2(32) NOT NULL (FK) AUF_REG_KEY VARCHAR2(32) NOT NULL (FK) AUB_FW_KEY VARCHAR2(32) NOT NULL (FK) AUB_REG_KEY_VARCHAR2(32) NOT NULL (FK) AUX_LUTS_KEY VARCHAR2(32) NOT NULL (FK) LFF_FW_KEY_VARCHAR2(32) NOT NULL (FK) LFF_REG_KEY_VARCHAR2(32) NOT NULL (FK) LFB_FW_KEY_VARCHAR2(32) NOT NULL (FK) LFB_REG_KEY_VARCHAR2(32) NOT NULL (FK) LFX_LUTS_KEY_VARCHAR2(32) NOT NULL (FK) SRT_FW_KEY_VARCHAR2(32) NOT NULL (FK) SRT_REG_KEY_VARCHAR2(32) NOT NULL (FK) ROP_FW_KEY_VARCHAR2(32) NOT NULL (FK) ROP_REG_KEY_VARCHAR2(32) NOT NULL (FK) DESCRIPTION VARCHAR2(512) NULL

GMT_SOFTWARE_CONFIG

KEY VARCHAR2(32) NOT NULL (PK) ETAWEIGHT_BARREL_FLOAT(126) NOT NULL PHIWEIGHT_BARREL FLOAT (126) NOT NULL ETAPHITHRESHOLD_BARREL_FLOAT(126) NOT NULL ETAWEIGHT_ENDCAP_FLOAT(126) NOT NULL PHIWEIGHT_ENDCAP_FLOAT(126) NOT_NULL ETAPHITHRESHOLD_ENDCAP_FLOAT(126) NOT_NULL CALOTRIGGER CHAR(1) NOT NULL ISOLATIONCELLSIZEETA NUMBER(5) NOT NULL ISOLATIONCELLSIZEPHI NUMBER(5) NOT NULL ETAWEIGHT_COU FLOAT (126) NOT NULL PHIWEIGHT_COU_FLOAT(126) NOT NULL ETAPHITHRESHOLD_COU_FLOAT(126) NOT_NULL DOOVLRPCAND CHAR(1) NOT NULL PROPAGATEPHI CHAR(1) NOT NULL MERGEMETHODPHIBRL VARCHAR2(10) NOT NULL MERGEMETHODPHIFWD VARCHAR2(10) NOT NULL MERGEMETHODETABRL VARCHAR2(10) NOT NULL MERGEMETHODETAFWD VARCHAR2(10) NOT NULL MERGEMETHODPTBRL VARCHAR2(10) NOT NULL MERGEMETHODPTFWD VARCHAR2(10) NOT NULL MERGEMETHODCHARGEBRL VARCHAR2(10) NOT NULL MERGEMETHODCHARGEFWD VARCHAR2(10) NOT NULL MERGEMETHODMIPBRL VARCHAR2(10) NOT NULL MERGEMETHODMIPFWD VARCHAR2(10) NOT NULL MERGEMETHODMIPSPECIALUSEANDBRL CHAR(1) NOT NULL

GMT_INX_REGISTERS

KEY VARCHAR2(32) NOT NULL (PK) SyncConfigReg_addr0 NUMBER(5) NOT NULL SyncConfigReg_addr1 NUMBER(5) NOT NULL SyncConfigReg_addr2 NUMBER(5) NOT NULL SyncConfigReg_addr3 NUMBER(5) NOT NULL LATDelayReg_addr NUMBER(5) NOT NULL SimuSpyConfig_addr NUMBER(5) NOT NULL

.

-

-

GMT_AUX_REGISTERS

KEY VARCHAR2(32) NOT NULL (PK) ReadoutSyncReg_addr NUMBER(5) NOT NULL SimuSpyConfig_addr NUMBER(5) NOT NULL SpyDepth_addr NUMBER(5) NOT NULL SpyArmPulse_waddr NUMBER(5) NOT NULL DESCRIPTION VARCHAR2(512) NULL

GMT_LFX_REGISTERS

KEY VARCHAR2(32) NOT NULL (PK) CDLConfig_addr0 NUMBER(5) NOT NULL CDLConfig_addr1 NUMBER(5) NOT NULL SortRankOffset_addr NUMBER(5) NOT NULL MMConfig_SRK_addr NUMBER(5) NOT NULL MMConfig_Phi_addr NUMBER(5) NOT NULL MMConfig_Pt_addr NUMBER(5) NOT NULL MMConfig_MP_addr NUMBER(5) NOT NULL MMConfig_MP_addr NUMBER(5) NOT NULL MMConfig_ISO_addr NUMBER(5) NOT NULL MMCONFIGISO_ADDR NUMBER(5) NOT NULL MMCONFIGISO_ADDR NUMBER(5) NOT NULL MMCONFIGISO_ADDR NUMBER(5) NOT NULL MMCONFIGISO_ADDR NUMBER(5) NOT NULL MMCONFIGISON NOT NULL MMCON

GMT_SRT_REGISTERS

.

★ KEY VARCHAR2(32) NOT NULL (PK) ReadoutSyncReg_addr NUMBER(5) NOT NULL LATDelayReg_addr NUMBER(5) NOT NULL SimuSpyConfig_addr NUMBER(5) NOT NULL SpyDepth_addr NUMBER(5) NOT NULL SpyArmPulse_waddr NUMBER(5) NOT NULL DESCRIPTION VARCHAR2(512) NULL

GMT_ROP_REGISTERS

KEY VARCHAR2(32) NOT NULL (PK) reset addr NUMBER(5) NOT NULL reset_dcm_addr_NUMBER(5)_NOT_NULL command_addr NUMBER(5) NOT NULL ITAG_enable_addr_NUMBER(5) NOT_NULL prog_enable_addr_NUMBER(5)_NOT_NULL nprog_addr_NUMBER(5) NOT_NULL init_cmd_addr_NUMBER(5) NOT_NULL din_INF_addr NUMBER(5) NOT NULL din_INC_addr NUMBER(5) NOT NULL din_IND_addr_NUMBER(5) NOT_NULL din_INB_addr NUMBER(5) NOT NULL din AUF addr NUMBER(5) NOT NULL din_LFF_addr NUMBER(5) NOT NULL din_LFB_addr NUMBER(5) NOT NULL din_AUB_addr_NUMBER(5) NOT_NULL din_SRT_addr_NUMBER(5) NOT_NULL dummy_cmd_addr_NUMBER(5) NOT_NULL LATDelayReg_addr_NUMBER(5) NOT_NULL

GMT emulator in CMSSW

- A fully working standalone GMT emulator was committed to CMSSW. It is using intended interface classes - ready to be run in the full framework.
- The GMT emulator code resides in L1Trigger/GlobalMuonTrigger. It contains also a gmt.cfi file with the default GMT configuration and some .cfg files to run and test in the standalone mode with sample data.
- The interface classes reside in: DataFormats/L1GlobalMuonTrigger. These have been tagged and scheduled for the 0_8_0 prerelease can be referenced by other systems.

GMT emulator in CMSSW

