CONTEXT Ctr_HM
EXTENDS Ctr_IPC
SETS
  SYSTEM_ERRORS
  MODULE_RECOVERY_ACTIONS
  PARTITION_RECOVERY_ACTIONS
  ERROR_LEVEL_MP
  ERROR_LEVEL_P
  MODULE_STATES
  PROC_LEVEL_ERRORS
CONSTANTS
  MLA_IGNORE
  MLA_SHUTDOWN
  MLA_RESET
  PLA_IGNORE
  PLA_IDLE
  PLA_WARM_START
  PLA_COLD_START
  ERROR_LEVEL_MODULE
  ERROR_LEVEL_PARTITION1
  ERROR_LEVEL_PARTITION2
  ERROR_LEVEL_PROCESS
  DEADLINE_MISSED
  APPLICATION_ERROR
  ILLGAL_REQUEST
  STACK_OVERFLOW
  MEMORY_VIOLATION
  HARDWARE_FAULT
  POWER_FAILURE
  Module_HM_Table
  MultiPart_HM_Table
  Partition_HM_Table
AXIOMS
  axm_system: $finite(SYSTEM\_ERRORS) \wedge card(SYSTEM\_ERRORS) > 0$
  axm_module_rec: $partition(MODULE\_RECOVERY\_ACTIONS, \{MLA\_IGNORE\}, \{MLA\_SHUTDOWN\}, \{MLA\_R$

  axm_part_rec: $partition(PARTITION\_RECOVERY\_ACTIONS, \{PLA\_IGNORE\}, \{PLA\_IDLE\}, \{PLA\_WARM\_ST$

  axm_error_level: $partition(ERROR\_LEVEL\_MP, \{ERROR\_LEVEL\_MODULE\}, \{ERROR\_LEVEL\_PARTITION1$

  axm_error_level_p: $partition(ERROR\_LEVEL\_P, \{ERROR\_LEVEL\_PARTITION2\}, \{ERROR\_LEVEL\_PROCESS$

  axm_module_state: $finite(MODULE\_STATES) \wedge card(MODULE\_STATES) > 0$
  axm_proc_level: $partition(PROC\_LEVEL\_ERRORS, \{DEADLINE\_MISSED\}, \{APPLICATION\_ERROR\}, \{ILLG$

  axm_module_hm_tab: $Module\_HM\_Table \in SYSTEM\_ERRORS \nrightarrow (MODULE\_STATES \times MODULE\_RECOVERY\_AG$

  axm_multiPart_hm_tab: $MultiPart\_HM\_Table \in PARTITIONS \rightarrow (SYSTEM\_ERRORS \nrightarrow MODULE\_RECOVERY\_A$

  axm_Part_hm_tab: $Partition\_HM\_Table \in PARTITIONS \rightarrow (SYSTEM\_ERRORS \nrightarrow (ERROR\_LEVEL\_P \times$
    $PARTITION\_RECOVERY\_ACTIONS \nrightarrow PROC\_LEVEL\_ERRORS))$
END