context Ctx_HM **extends** Ctx_IPC

sets SYSTEM_ERRORS MODULE_RECOVERY_ACTIONS PARTITION_RECOVERY_ACTIONS
ERROR_LEVEL_MP
ERROR_LEVEL_P
MODULE_STATES PROC_LEVEL_ERRORS

constants DEADLINE_MISSED APPLICATION_ERROR NUMERIC_ERROR ILLEGAL_REQUEST
STACK_OVERFLOW MEMORY_VIOLATION HARDWARE_FAULT
POWER_FAILURE
PLA_IGNORE PLA_IDLE PLA_WARM_START
PLA_COLD_START
MLA_IGNORE MLA_SHUTDOWN
MLA_RESET
ERROR_LEVEL_MODULE ERROR_LEVEL_PARTITION1 ERROR_LEVEL_PARTITION2
ERROR_LEVEL_PROCESS
Module_HM_Table MultiPart_HM_Table Partition_HM_Table

axioms
@axm01 finite(**SYSTEM_ERRORS**) ∧ card(**SYSTEM_ERRORS**) > 0
@axm02 partition(**ERROR_LEVEL_MP**,{**ERROR_LEVEL_MODULE**},{**ERROR_LEVEL_PARTITION1**})

@axm03 partition(**ERROR_LEVEL_P**,{**ERROR_LEVEL_PARTITION2**},{**ERROR_LEVEL_PROCESS**})

@axm04 partition(**MODULE_RECOVERY_ACTIONS**,{**MLA_IGNORE**},{**MLA_SHUTDOWN**},{**MLA_RESET**})

@axm05
partition(**PARTITION_RECOVERY_ACTIONS**,{**PLA_IGNORE**},{**PLA_IDLE**},{**PLA_WARM_START**},{**PLA_COLD_STAR T**})

@axm06 finite(**MODULE_STATES**) ∧ card(**MODULE_STATES**) > 0

@axm10
partition(**PROC_LEVEL_ERRORS**,{**DEADLINE_MISSED**},{**APPLICATION_ERROR**},{**NUMERIC_ERROR**},{**ILLEGAL_RE QUEST**},{**STACK_OVERFLOW**},{**MEMORY_VIOLATION**},{**HARDWARE_FAULT**},{**POWER_FAILURE**})

@axm07 **Module_HM_Table**∈**SYSTEM_ERRORS**↦→(**MODULE_STATES** × **MODULE_RECOVERY_ACTIONS**)

@axm08 **MultiPart_HM_Table**∈**PARTITIONS**→(**SYSTEM_ERRORS**↦→**MODULE_RECOVERY_ACTIONS**)

@axm09 **Partition_HM_Table**∈**PARTITIONS**→(**SYSTEM_ERRORS**↦→(**ERROR_LEVEL_P**× **PARTITION_RECOVERY_ACTIONS**↦→**PROC_LEVEL_ERRORS**))

end