CONTEXT C_Part_Proc_Trans
SETS
    PARTITIONS
    PARTITION_MODES
    CORES
    PROCESSES
    PROCESS_STATES
    Services
    Location
CONSTANTS
    PM_IDLE
    PM_COLD_START
    PM_WARM_START
    PM_NORMAL
    Cores_of_Partition
    PS_Dormant
    PS_Ready
    PS_Waiting
    PS_Suspend
    PS_WaitandSuspend
    PS_Running
    PS_Faulted
    Set_Normal
    Create_Process
    Set_Priority
    Suspend_self
    Resume
    Stop_self
    Stop
    Start_aperiod_instart
    Start_aperiod_innormal
    Start_period_instart
    Start_period_innormal
    Delay_start_aperiod_instart
    Delay_start_aperiod_innormal
    Delay_start_period_instart
    Delay_start_period_innormal
    Time_Wait
    Period_Wait
    Req_busy_resource
    Resource_become_avail
    Resource_become_avail2
    Send_Queuing_Message_Wait
    Wakeup_Waitproc_on_Srcqueports
    Wakeup_Waitproc_on_Dstqueports
    Receive_Queuing_Message_Wait
    Send_Buffer_NeedWakeup
    Send_Buffer_Withfull
    Receive_Buffer_NeedWakeup
    Receive_Buffer_Whenempty
    Display_Blackboard_NeedWakeup
    Read_Blackboard_Whenempty

Wait_Semaphore_Whenzero

Signal_Semaphore_NeedWakeup

Set_Event_NeedWakeup

Wait_Event_Whendown

Create_Mutex

Acquire_Mutex

Release_Mutex

Reset_Mutex

loc_i

loc_1

loc_2

loc_3

loc_4

loc_5

loc_6

loc_7

loc_r

AXIOMS

axm_parta_finite: $finite(PARTITIONS)$

axm_part_num: $card(PARTITIONS) > 0 \land card(PARTITIONS) < 256$

axm_part_modes: $partition(PARTITION\_MODES, \{PM\_IDLE\}, \{PM\_COLD\_START\}, \{PM\_WARM\_START\}, \{P$

axm_assigned_cores_of_part: $Cores\_of\_Partition \in PARTITIONS \to \mathbb{P}_1(CORES)$

axm_procs_finite: $finite(PROCESSES)$

axm_proc_states: $partition(PROCESS\_STATES, \{PS\_Dormant\}, \{PS\_Ready\}, \{PS\_Waiting\}, \{PS\_Suspend\}, \{PS\_W$

axm_services:
$partition(Services, \{Set\_Normal\}, \{Create\_Process\}, \{Set\_Priority\}, \{Suspend\_self\}, \{Resume\}, \{Stop\_self\}, \{Stop$
$\{Start\_aperiod\_instart\}, \{Start\_aperiod\_innormal\}, \{Start\_period\_instart\}, \{Start\_period\_innormal\}, \{Delay\_start\_a$
$\{Delay\_start\_aperiod\_innormal\}, \{Delay\_start\_period\_instart\}, \{Delay\_start\_period\_innormal\}, \{Time\_Wait\}, \{Peri$
$\{Req\_busy\_resource\}, \{Resource\_become\_avail\}, \{Resource\_become\_avail2\}, \{Send\_Queuing\_Message\_Wait\}, \{Wake$
$\{Wakeup\_Waitproc\_on\_Dstqueports\}, \{Receive\_Queuing\_Message\_Wait\}, \{Send\_Buffer\_NeedWakeup\}, \{Send\_Bu$
$\{Receive\_Buffer\_Whenempty\}, \{Display\_Blackboard\_NeedWakeup\}, \{Read\_Blackboard\_Whenempty\}, \{Wait\_Sema$
$\{Set\_Event\_NeedWakeup\}, \{Wait\_Event\_Whendown\}, \{Create\_Mutex\}, \{Acquire\_Mutex\}, \{Release\_Mutex\}, \{Rese$

axm_location_partition: $partition(Location, \{loc\_i\}, \{loc\_1\}, \{loc\_2\}, \{loc\_3\}, \{loc\_4\}, \{loc\_5\}, \{loc\_6\}, \{loc\_7\}, \{loc\_r\})$

END