# Definitions

Resource Ceiling: Highest preemption level among all tasks that can use the shared resource (statically defined)  
System Ceiling: Largest resource ceiling among all currently locked shared resources (changes at runtime)

# Phase 2

1. System Ceiling variable – systemCeiling?
   1. Stack used to calculate systemCeiling (highest of resource ceiling)
      1. Push --> pend
      2. Pop --> post
   2. Pushing and popping mutex pointer
2. Resource Ceiling
   1. Store as TCB pointer
   2. Store inside mutex object
3. Mutex pend
   1. Update system ceiling
4. Mutex post
   1. Update system ceiling
   2. Unblock tasks from RB Tree that have higher priorities than the newly changed system ceiling.
5. OSSched
   1. If a task that is NOT the current task wants to pre-empt, need check   
      deadline from EDF < deadline (from system ceiling) 🡪 higher priority than system ceiling
      1. If fail check, remove task from ready list, add to RB tree. Run EDF scheduler again for new task to run; run the above check again.
   2. If task picked by EDF is current task, resume current task

To improve:

* Use event flags for synchronous release
* Use memget for memory management