

**Input:** A client peer  $n_i$

**Operation:**

**if**  $SP(n_i) \neq \text{null}$  **then**

**if**  $\text{State}(SP(n_i)) == \text{failed}$  **then**

$\text{SPFailureHandler}(n_i)$ .

**else** Do nothing and return.

**end if**

**else**

$\text{RemoveFailedSPIfExist}(n_i)$ .

**if**  $UpdSP = \text{RetriveUpdateSPc}(n_i)$  **then**

$\text{UpdateSPCandidates}(n_i, UpdSP)$ .

**end if**

**if**  $\text{ExistBiggerSPCandidate}(n_i) == \text{true}$  **then**

$\text{CanSP}(n_i) = \text{RetriveNewSPCandidates}(n_i)$ .

$\text{NotifyNewSPcandidates}(n_i)$ .

**if**  $n_i \in \text{CanSP}(n_i)$  **then**

$\text{ChangeRole}(n_i)$ .

**end if**

**else**

**if**  $n_i \notin \text{CanSP}(n_i)$  **then**

$\text{Search\&JoinUnderLoadedSP}(n_i)$ .

**else**

$\text{ChangeRole}(n_i)$ .

**end if**

**end if**

**end if**