Algorithm 7: RefineCandidates

Input : $acceptedCandSet_1$, $acceptedCandSet_2$, $\vec{B}$, $\vec{\sigma}$, $\hat{O}.m$, $\mathcal{D}$
ConfigParams: noSimulations, $\overrightarrow{PB}$, CB, maxSimBudget, budgetDelta, budgetThreshold
Output : bestCandidate, $\hat{O}.m$

newCandSet$_2$ ← Perform simulations and store candidates from $acceptedCandSet_2$ that return the *result* as *accept* from `PerformStochasticSimulations` (Algorithm 9) and whose O.m is statistically better than $\hat{O}.m$ with at least CB confidence
acceptedCandSet ← acceptedCandSet$_1$ ∪ newCandSet$_2$
budget ← 1
iterationNo ← 1
repeat
  $\overrightarrow{N}^{iterNo}$ ← `ExtendedOCBA`($\overrightarrow{N}^{iterNo-1}$, iterationNo, $\mathcal{D}$, acceptedCandSet, noSimulations, budgetDelta) `// Algorithm 8`
  for $c \in acceptedCandSet$ **do**
    (result, $O.m, O.sd, \overrightarrow{SC.m}, \overrightarrow{SC.sd}$, N) ← `PerformStochasticSimulations` ($\overrightarrow{X}_c, \vec{B}, \vec{\sigma}, \mathcal{D}$, N_c^{iterNo}, N_c^{iterNo}, $\overrightarrow{PB}$, CB) `// Algorithm 9`
    if result is accept **then**
      $\hat{O}$.m ← O.m
    else if result is reject **then**
      Remove c from acceptedCandSet
  end
  budget ← budget + budgetDelta
  iterationNo ← iterationNo + 1
until budget > budgetThreshold
bestCandidate ← {c ∈ acceptedCandSet | $O.m_c = \hat{O}.m$}
return bestCandidate, $\hat{O}.m$