Algorithm 4 The cSAV Algorithm: for a single virtual network request
Input: The redundant substrate network as ${\cal G}^S.$ The current interested virtual
network request as G^V .
ı: Initialize variables: ${\cal N}$ for maximum back-off times; two empty stacks ${\cal S}$ (for
mapped nodes) and Q (for unmapped nodes).
2: Apply the heuristic computation in the virtual network. Find the virtual
node m with the highest heuristic value $H(m)$. Let node $m'=m$.
3: repeat
4: Try to map m to $n \in G_S$, starting from substrate node with higher
heuristic value.
5: if No applicable substrate node n to host virtual node m and correspond-
ing virtual link mm' then
6: if $N == 0$ then
7: return MAP_FAILED
8: else
9: $N \leftarrow N-1$
10: $Q.push(m), m = S.pop().$
11: $S.push(m)$.
12: Update the redundant network, recalculating heuristics.
13: for all Virtual node $m' \in Adj(m)$ in the decreasing order of $H(m')$ do
14: $Q.push(m')$
15: $m' = m. \ m = Q.pop().$
16: $\mathbf{until}\ Empty(Q) == \mathbf{true}$
17: return MAP_SUCCESS