ALGORITHM 7: *RegionAssignmentAndDataOverlay*$(G, PASS, STATUS)$

1: Initialize actor to region assignments <*V,R*>, as each actor occupies a separate region.
2: Construct IF table entry for each region pair $<(r_i, r_j), Integer>$, where $r_i, r_j \in R, i < j$
3: $region\_mem \leftarrow \sum_{r \in R} C_r$
4: Initialize life time of all data segments $LIFE$
5: $buf\_mem \leftarrow calBuf(PASS, LIFE)$
6: $data\_overhead \leftarrow 0$
7: **while** $region\_mem + buf\_mem > C_p$ and $!(|R| = 1$ and $buf\_mem = BUF\_MIN)$ **do**
8: **if** $buf\_mem = BUF\_MIN$ **then**
9: $do\_weight \leftarrow +\infty$, $co\_weight \leftarrow 0$
10: **else if** $|R| = 1$ **then**
11: $co\_weight \leftarrow +\infty$, $do\_weight \leftarrow 0$
12: **else**
13: $do\_weight \leftarrow \Delta_{t\_do}/\Delta_{m\_do}$, $co\_weight \leftarrow \Delta_{t\_co}/\Delta_{m\_co}$
14: **end if**
15: **if** $do\_weight < co\_weight$ **then**
16: $< buf\_mem, overhead > \leftarrow DataOverlay(PASS,\ STATUS, LIFE)$
17: $data\_overhead \leftarrow data\_overhead + overhead$
18: **else**
19: Collapse region pair $<r_i, r_j>$ with minimum IF. Update <*V,R*>, and IF table.
20: $region\_mem \leftarrow \sum_{r \in R} C_r$
21: **end if**
22: **end while**
23: **return** <<*V,R*>, $data\_overhead$>