
ALGORITHM 8: *DataOverlay(PASS, STATUS, LIFE)*

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1: old_buf  $\leftarrow$  calBuf(PASS, LIFE)
2: cur_buf  $\leftarrow$  old_buf, overhead  $\leftarrow$  0
3: while old_buf  $\neq$  BUF_MIN and cur_buf = old_buf do
4:   Find time interval  $k \in [0, |PASS| - 1]$  with the largest data buffer usage
5:    $\langle i, j \rangle \leftarrow \text{findToken}(PASS, STATUS, LIFE, k)$ 
6:   cost  $\leftarrow T_c(\text{getDataSegment}(PASS, i, j))$ 
7:   overhead  $\leftarrow$  overhead + setDMABusy(PASS, STATUS, cost, i, k)
8:   overhead  $\leftarrow$  overhead + setDMABusy(PASS, STATUS, cost, k, j)
9:   Update LIFE for  $\langle i, j \rangle$ 
10:  cur_buf  $\leftarrow$  calBuf(PASS, LIFE)
11: end while
12: return  $\langle \text{cur\_buf}, \text{overhead} \rangle$ 
```
