Algorithm 1 Coding procedure

$B = \{$Buses waiting at the station $\}$
$S = \{$Next hop nodes to be reached by B $\}$
for all $s_i \in S$ **do**
  for all $s_j \in S, j \neq i$ **do**
    if $Q_{ij} \neq \varnothing$ and $Q_{ji} \neq \varnothing$ **then**
      m_i is picked at the head of Q_{ij}
      m_j is picked at the head of Q_{ji}
      return $m_c = m_i \oplus m_j$
    end if
  end for
end for

Algorithm 2 CDS with betweenness centrality

Require: A connected graph $G(V, E)$
1: $d \leftarrow \{v : bw(v)\}, v \in V$, sort by BW on ascending order
2: $V' \leftarrow \varnothing$, connected dominating sets
3: **for all** $v : bw(v), v \notin V'$ **do**
4: **if** $bw(v) = 0$ OR $G(V - \{v\})$ is connected **then**
5: $V' \leftarrow V' \cup MAX - BW(N(v))$
6: **else**
7: $V' \leftarrow V' \cup \{v\}$
8: **end if**
9: $V \leftarrow V - \{v\}$
10: **end for**

Algorithm 3 Euclids algorithm

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1: procedure EUCLID(a, b)                    ▷ The g.c.d. of a and b
2:     r ← a mod b
3:     while r ≠ 0 do                        ▷ We have the answer if r is 0
4:         a ← b
5:         b ← r
6:         r ← a mod b
7:     end while
8:     return b                              ▷ The gcd is b
9: end procedure
```