min travel_cost*$\sum_{i\in ALL}\sum_{j\in ALL}\sum_{a\in A} x_{i,j,a}*distance_{i,j}$ + wait_cost * $\sum_{i\in C}\sum_{a\in A} w_{i,a}$ + $\sum_{i\in RBLE}\sum_{a\in A} s_{i,a}$

1) $\sum_{i\in ALL}\sum_{a\in A} x_{i,j,a} = 1$, $j\in C$

2) $\sum_{i\in ALL}\sum_{a\in A} x_{i,j,a} \leq 1$, $j\in FO$

3) $\sum_{j\in REAL} x_{start,j,a} = 1$, $a\in A$

4) $x_{start,j,a} = 0$, $j\in FO,\ a\in A$

5) $\sum_{i\in RBLE} x_{i,s,a} = 1$, $a\in A$

6) $\sum_{i\in ALL} x_{i,h,a} - \sum_{j\in ALL} x_{h,j,a} = 0$, $h\in ALL,\ a\in A$

7) $x_{i,i,a} = 0$, $i\in ALL,\ a\in A$

8) $c_{j,a} = service_j * \sum_{i\in ALL} x_{i,j,a}$, $i\in C,\ a\in A$

9) $\sum_{i\in ALL}\sum_{j\in o+FO} c_{j,a} * x_{i,j,a} >= service_o$, $a\in A$

10) $c_{j,a} \geq x_{i,j,a}$, $i\in ALL,\ j\in RBLE,\ a\in A$

11) $\sum_{i\in ALL}\sum_{i\in o+FO} x_{i,j,a} \geq 1$, $a\in A$

12) $x_{i,j,a} = 0$, $i\in o+FO,\ j\in o+FO,\ a\in A$

13) $x_{i,o,a} = 0$, $i\in C,\ a\in A$

14) $x_{j,j+clients,a} \leq \sum_{i\in ALL} x_{i,j,a}$, $j\in C,\ a\in A$

15) $\{x_{i,j,a} = 0\ \ if\ i\neq j-clients\}$, $i\in REAL,\ j\in FO,\ a\in A$

16) $window\_start_i * \sum_{h\in ALL} x_{h,i,a} \leq s_{i,a}$, $i\in C,\ a\in A$

17) $window\_end_i * \sum_{h\in ALL} x_{h,i,a} \geq s_{i,a}$, $i\in C,\ a\in A$

18) $l_{i,j,a} * (s_{i,a} + c_{i,a} + distance_{i,j} + w_{j,a}) \geq l_{i,j,a} * lunch\_start$,
      $i\in RBLE,\ j\in RBLE,\ a\in A$

19) $l_{i,j,a} * (s_{i,a} + c_{i,a} + distance_{i,j} + w_{j,a}) \leq l_{i,j,a} * lunch\_end$,
      $i\in RBLE,\ j\in RBLE,\ a\in A$

20) $l_{i,j,a} \leq x_{i,j,a} * lunch\_end$, $i\in RBLE,\ j\in RBLE,\ a\in A$

21) $t_a = max(s_{i,a},\ i\in RBLE)$, $a\in A$

22) $work\_end * \sum_{i\in RBLE}\sum_{j\in RBLE} l_{i,j,a} \geq t_a - lunch\_start$, $a\in A$

23) $work\_end * \sum_{i\in RBLE}\sum_{j\in RBLE}(1 - l_{i,j,a}) \geq lunch\_start - t_a$, $a\in A$

24) $s_{j,a} = \sum_{i\in RBLE,\ i!=j} x_{i,j,a} * (s_{i,a} + c_{i,a} +$
      $distance_{i,j} + l_{i,j,a} * lunch\_len) + w_{j,a}$, $j\in RBLE,\ a\in A$

25) $\sum_{i\in RBLE}\sum_{j\in RBLE} x_{i,j,a} * distance_{i,j}$ +
      $\sum_{i\in ALL}\sum_{j\in RBLE} x_{i,j,a} * service_j$ +
      $\sum_{i\in RBLE} w_{i,a}$ +
      $\sum_{i\in RBLE}\sum_{j\in RBLE} l_{i,j,a} * lunch\_len$ +
      $work\_start \leq work\_end$, $a\in A$

$x_{i,j,a} \in \{0,1\}$, $i\in ALL,\ j\in ALL,\ a\in A$

$y_{i,a} \in N$, $i\in ALL,\ a\in A$

$c_{i,a} \in N$, $i\in ALL,\ a\in A$

$w_{i,a} \in N$, $i\in ALL,\ a\in A$

$l_{i,j,a} \in \{0,1\}$, $i\in ALL,\ j\in ALL,\ a\in A$

$t_a \in N$, $a\in A$

$start = clients + 1$

$o = 0$

$C = \{1, ..., clients\}$

$ALL = \{0, ...2clients + 1\}$

$REAL = \{0, ..., clients\}$

$RBLE = ALL - \{s\}$

$FO = \{P + 2, ..., 2clients + 1\}$