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

1) $\sum_{i\in ALL}\sum_{a\in A} x_{i,j,a} = 1 \;, \qquad j \in C$
2) $\sum_{i\in ALL}\sum_{a\in A} x_{i,j,a} \leq 1 \;, \qquad j \in FO$
3) $\sum_{j\in REAL} x_{start,j,a} = 1 \;, \qquad a \in A$
4) $x_{start,j,a} = 0 \;, \qquad j \in FO,\; a \in A$
5) $\sum_{i\in RBLE} x_{i,s,a} = 1 \;, \qquad a \in A$
6) $\sum_{i\in ALL} x_{i,h,a} \; - \; \sum_{j\in ALL} x_{h,j,a} = 0 \;, \qquad h \in ALL,\; a \in A$
7) $x_{i,i,a} = 0 \;, \qquad i \in ALL,\; a \in A$
8) $c_{j,a} = service_j * \sum_{i\in ALL} x_{i,j,a} \;, \qquad i \in C,\; a \in A$
9) $\sum_{i\in ALL}\sum_{j\in o+FO} c_{j,a} * x_{i,j,a} = service_o \;, \qquad a \in A$
10) $c_{j,a} \geq x_{i,j,a} \;, \qquad i \in ALL,\; j \in RBLE,\; a \in A$
11) $\sum_{i\in ALL}\sum_{i\in o+FO} x_{i,j,a} \geq 1 \;, \qquad a \in A$
12) $x_{i,j,a} = 0 \;, \qquad i \in o+FO,\; j \in o+FO,\; a \in A$
13) $x_{i,o,a} = 0 \;, \qquad i \in C,\; a \in A$
14) $x_{j,j+clients,a} \leq \sum_{i\in ALL} x_{i,j,a} \;, \qquad j \in C,\; a \in A$
15) $\{x_{i,j,a} = 0 \;\; if \; i \neq j - clients\} \;, \qquad i \in REAL,\; j \in FO,\; a \in A$
16) $window\_start_i * \sum_{h\in ALL} x_{h,i,a} \leq s_{i,a} \;, \qquad i \in C,\; a \in A$
17) $window\_end_i * \sum_{h\in ALL} x_{h,i,a} \geq s_{i,a} \;, \qquad i \in C,\; a \in A$
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) $l_{i,j,a} \leq x_{i,j,a} * lunch\_end \;, \qquad i \in RBLE,\; j \in RBLE,\; a \in A$
21) $t_a = max(s_{i,a},\; i \in RBLE) \;, \qquad a \in A$
22) $work\_end * \sum_{i\in RBLE}\sum_{j\in RBLE} l_{i,j,a} \geq t_a - lunch\_start \;, \qquad a \in A$
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) $s_{j,a} = \sum_{i\in RBLE,\; i!=j} x_{i,j,a} * (s_{i,a} + c_{i,a} +$
$distance_{i,j} + l_{i,j,a} * lunch\_len) + w_{j,a} \;, \qquad j \in RBLE,\; a \in A$
25) $\sum_{i\in RBLE}\sum_{j\in RBLE} x_{i,j,a} * distance_{i,j} \; +$
$\sum_{i\in ALL}\sum_{j\in RBLE} x_{i,j,a} * service_j \; +$
$\sum_{i\in RBLE} w_{i,a} \; +$
$\sum_{i\in RBLE}\sum_{j\in RBLE} l_{i,j,a} * lunch\_len \; +$
$work\_start \leq work\_end \;, \qquad a \in A$

$x_{i,j,a} \in \{0,1\} \;, i \in ALL,\; j \in ALL,\; a \in A$
$y_{i,a} \in N \;, i \in ALL,\; a \in A$
$c_{i,a} \in N \;, i \in ALL,\; a \in A$
$w_{i,a} \in N \;, i \in ALL,\; a \in A$
$l_{i,j,a} \in \{0,1\} \;, i \in ALL,\; j \in ALL,\; a \in A$
$t_a \in N \;, a \in A$

$start = clients + 1$
$o = 0$
$C = \{1, ..., clients\}$
$ALL = \{0, ...2clients + 1\}$
$REAL = \{0, ..., clients\}$
$RBLE = ALL - \{s\}$
$FO = \{P + 2, ..., 2clients + 1\}$