map-ping

k

(i, σ)

?

`MAP-INT`

?

??

$\sigma =$
0

$\sigma =$
1

$\Sigma =$
$\{0, 1\}$

$start_k$

k

$\sigma =$
0

??

$k, \ r$

k

$start_k$

if
$r \bmod$
$2 =$
0

then
re-turn
0

else
re-turn
1

if
$r \bmod$
$2 =$
0

then
re-turn
1

else
re-turn
0

p_k

k

i

$$y_{i-1}^k[k] \neq y_i^k[k] \quad (1)$$

k

$c[k]$

u_k

v_k

$c[k]$

p_k

$\mathcal{O}(r)$

r

k

u_k

v_k

r

$i \in$
$\{0, \ldots, M-$
$1\}$

u_k

v_k

σ

u_k

v_k

u_k

v_k

$$y^5 = 00101111000000000000$$

$c[5] =$
15

y^5

u_5

v_5

i

$i \neq$
0

$u_k[i]$

$v_k[i]$

$\sigma =$
1

$\sigma =$
0

$i =$
0

$u_k[i] =$

$v_k[i] =$
0

u_k

v_k

uv_k

$|uv_k| =$
r

$i \in$
$\{0, \ldots, r-$
$1\}$

$\sigma =$
0

u_k

v_k

$i \in$
$0, \ldots, r-1$