

ID_R, k_R^t, k_R^{t+1}

Reader

 ID_R, k_{tag}

Tag

Adversary

 $(TS, D, I, \delta_1, \delta_2)$ $n' \leftarrow \delta_1 \oplus h(ID_R \oplus k_{tag})$ $k_{tag} \leftarrow h(k_{tag})$ $f(D) \oplus n'$

Generate n_A
 $D_A \leftarrow D \oplus n_A$
 $\delta_A \leftarrow \delta_2 \oplus n_A$
 $x \leftarrow (TS \oplus n_A, D_A, I, \delta, *)$

 x $n' \leftarrow \delta \oplus h(ID_R \oplus k_{tag})$ $k_{tag} \leftarrow h(k_{tag})$ $f(D) \oplus n'$