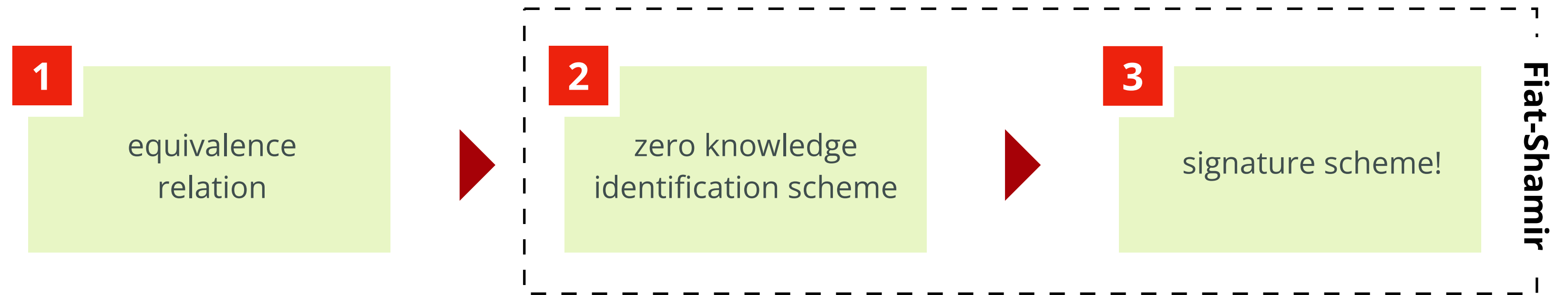




From MCE  
to MEDS



1 → 2

### SETUP

- Assume parameter set  $q, n, m, k$ . and "starting" code  $\mathcal{C}_0$
- Generate **secret key**  $A \in \text{GL}_m(q), B \in \text{GL}_n(q)$
- Generate **public key**  $\mathcal{C}_1 = A\mathcal{C}_0B$

### COMMIT

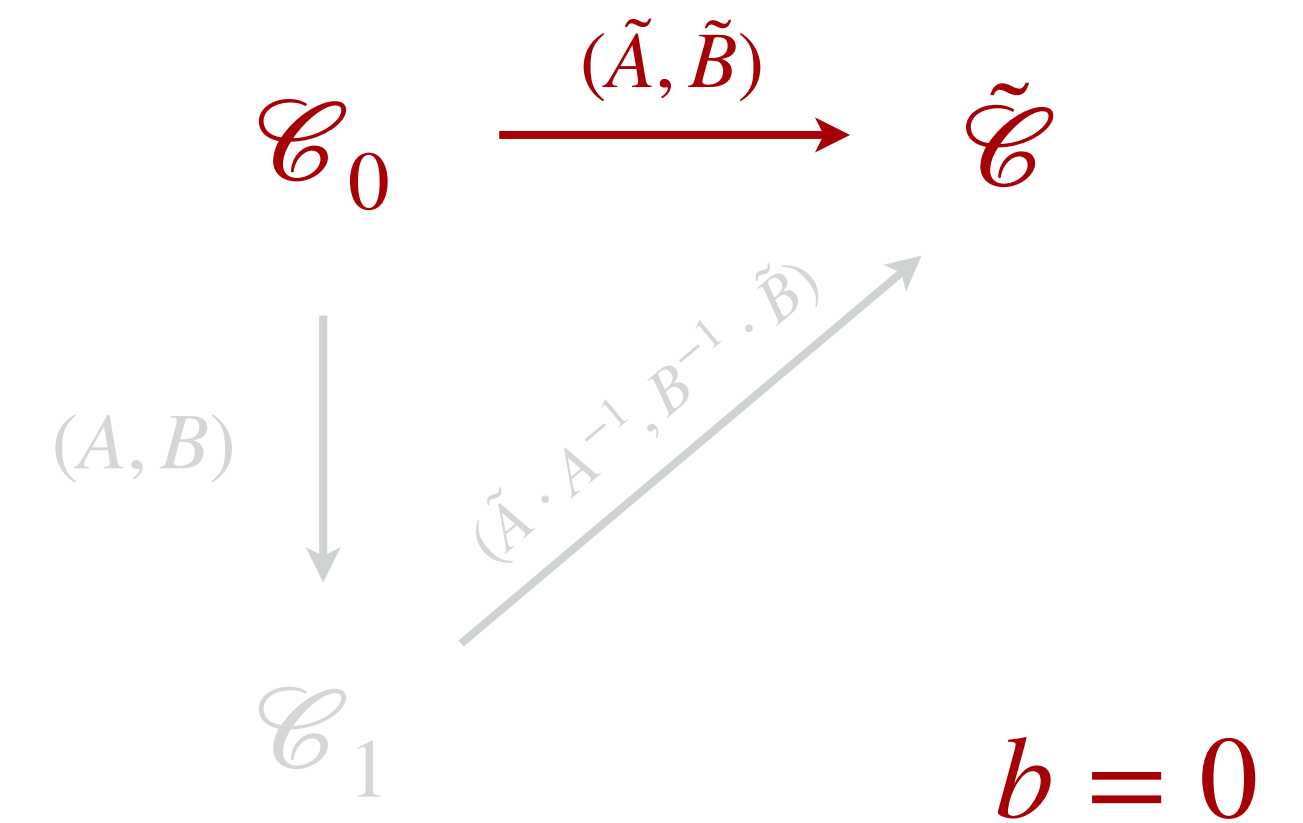
- Generate **ephemeral**  $\tilde{A} \in \text{GL}_m(q), \tilde{B} \in \text{GL}_n(q)$
- Generate **ephemeral code**  $\tilde{\mathcal{C}} = \tilde{A}\mathcal{C}_0\tilde{B}$

### CHALLENGE

- Pick a bit  $b \in \{0,1\}$

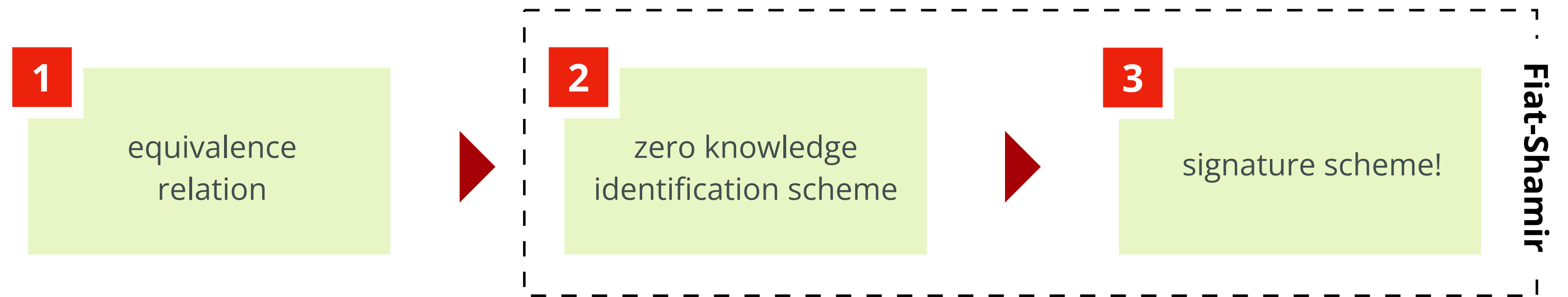
### RESPONSE

- if  $b = 0$ , reply with  $(\tilde{A}, \tilde{B})$
- if  $b = 1$ , reply with  $(\tilde{A} \cdot A^{-1}, B^{-1} \cdot \tilde{B})$





## From MCE to MEDS



1 → 2

### SETUP

- Assume parameter set  $q, n, m, k$ . and "starting" code  $\mathcal{C}_0$
- Generate **secret key**  $A \in \text{GL}_m(q), B \in \text{GL}_n(q)$
- Generate **public key**  $\mathcal{C}_1 = A\mathcal{C}_0B$

### COMMIT

- Generate **ephemeral**  $\tilde{A} \in \text{GL}_m(q), \tilde{B} \in \text{GL}_n(q)$
- Generate **ephemeral code**  $\tilde{\mathcal{C}} = \tilde{A}\mathcal{C}_0\tilde{B}$

### CHALLENGE

- Pick a bit  $b \in \{0,1\}$

### RESPONSE

- if  $b = 0$ , reply with  $(\tilde{A}, \tilde{B})$
- if  $b = 1$ , reply with  $(\tilde{A} \cdot A^{-1}, B^{-1} \cdot \tilde{B})$

