

$$\begin{aligned} \underline{x}_1, \dots, \underline{x}_3 &\in \mathbb{F}_q^t \\ \underline{y}_j^{(1)}, \dots, \underline{y}_j^{(4)} &\in \mathbb{F}_q^t \\ \underline{A}^{(r_1)}, \dots, \underline{A}^{(r_3)} &\in \mathbb{F}_q^{t \times 3t} \\ 1 \leq r_1 < r_2 < r_3 &\leq r \\ \underline{B}^{(j)} &\in \mathbb{F}_q^{t \times 3t} \\ j &\in \left\{1, \dots, \binom{r}{3}\right\} \end{aligned}$$

$$\text{rk} \begin{bmatrix} \underline{A}^{(r_1)} \\ \underline{A}^{(r_2)} \\ \underline{A}^{(r_3)} \\ \underline{B}^{(j)} \end{bmatrix} \geq 3t.$$