



#### subprocedures

DoAE: direction of arrival estimation

UID : user identification

DoAT: DoA tracking

BF : beam forming

SF : spatial filtering

#### variables

DoA : direction of arrival

**i** : identification sequence

**X**, **x** : signal model

DoA<sub>T</sub>: DoAs up to date

$\hat{x}(t)$  : fitered signal