Separated sensing and communication

Radar target

Communication user

Interference

Radar Tx/Rx

Comm. Tx

Orthogonal ISAC

R: Radar
C: Communication

Frequency

Power

R C

Time

ISAC transceiver

ISAC transceiver

To fully enjoy integration gain

Non-orthogonal ISAC

Frequency

Power

R

C

Time

Radar signal

Private signal

ISAC transceiver

Spatial-Division ISAC

SIC of radar signal

Decoding of private signal

Frequency

Power

R

C (common)

C (private)

Time

Radar signal

Private signal

Common signal

ISAC transceiver

Rate-Splitting ISAC

SIC of radar signal

Decoding/SIC of common signal

Decoding of private signal