

CPRI data compression and ETSI ORI standardization

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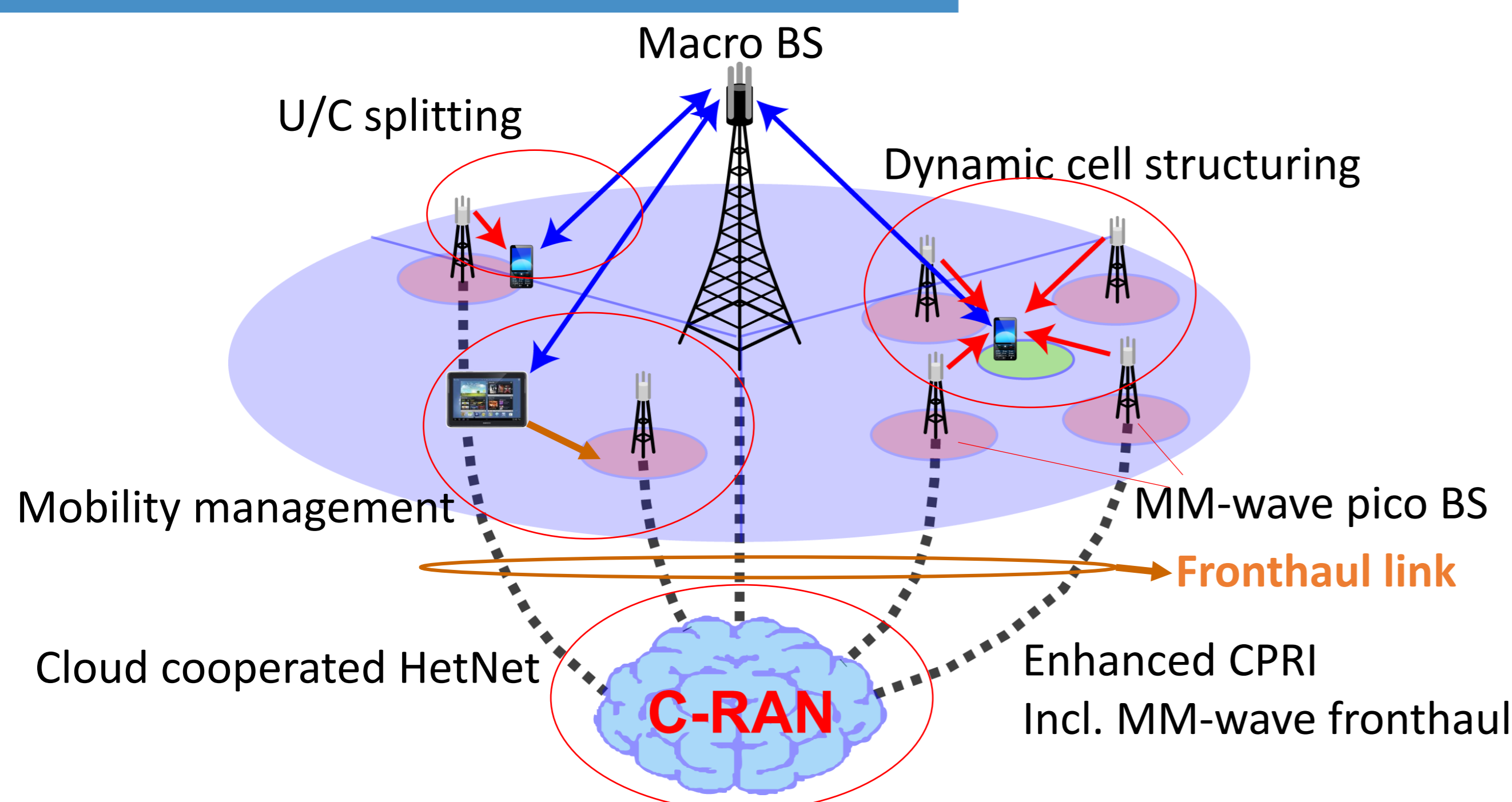
Purpose

- Practical CPRI data compression technique in centralized radio access networks (C-RANs) is investigated to mitigate the drawback of a higher-speed optical transmission in fronthaul links.

Outcome

- The proposed compression scheme achieved a 50 %-data compression with keeping the LTE signal quality.
- It was standardized in ETSI ORI (June 2014).

Background



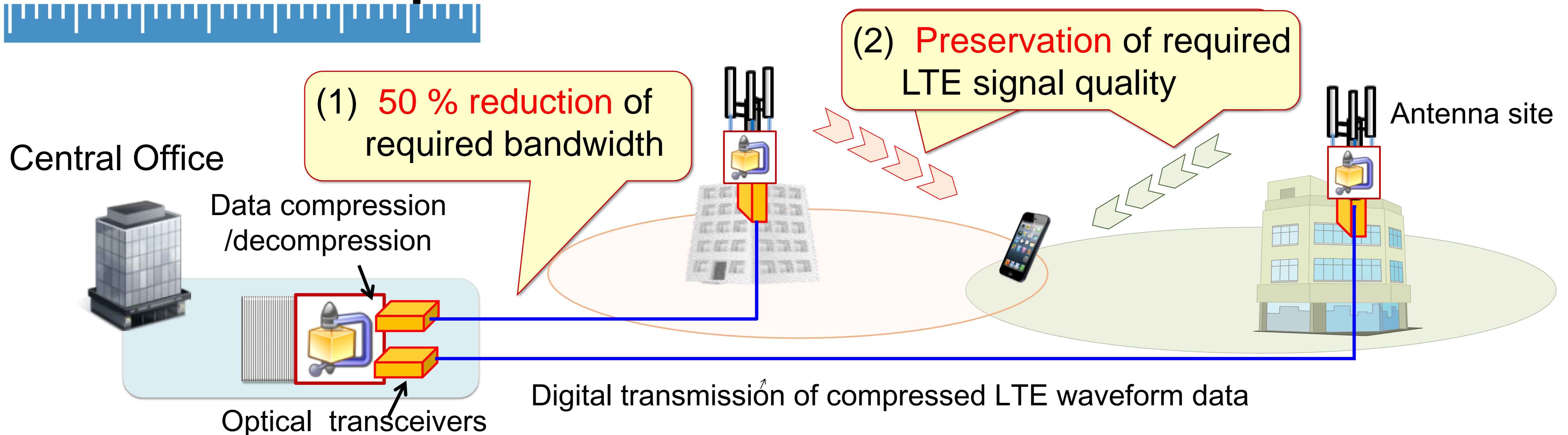
Critical Issue in C-RAN :

Increase of required bandwidth for fronthaul links due to multi-band, broadband and increase of number of antennas

Solution :

CPRI data compression

Benefit of Proposed Scheme



Numerical evaluation of proposed scheme

- In numerical evaluations, we used an actual LTE waveform data (Frequency bandwidth : 5MHz, data length : 5 sec)

Evaluation results

	Compression		Difference
	with	without	
Data rate	2.46 [Gbps]	4.92 [Gbps]	-50 [%]
Signal quality (EVM)	2.8 [%]	2.8 [%]	0 [%]
Signal to noise ratio	39.9 [dB]	39.6 [dB]	-0.3 [dB]

➔ 50 % reduction of required bandwidth without LTE signal degradation.