



# BAND PLANNING: UL-DL FREQUENCY SEPARATION

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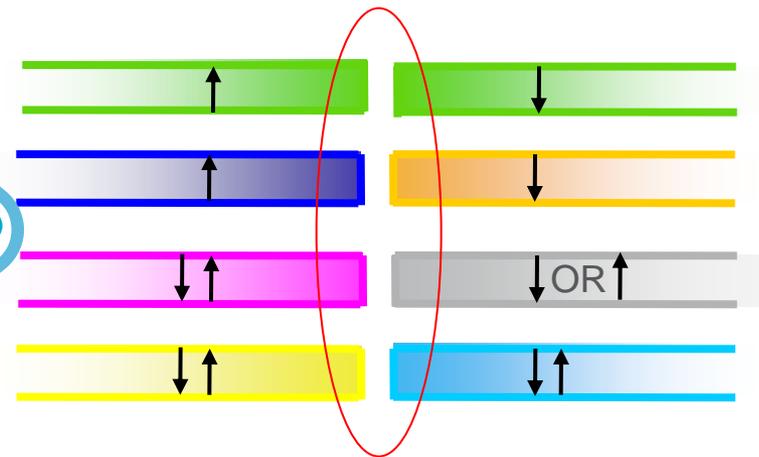
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# TREND: SMALL UL/DL SEPARATION

Strong growth of data traffic  
Need to use every available Hz  
New identified spectrum sometimes close to existing spectrum

Small UL-DL frequency separation



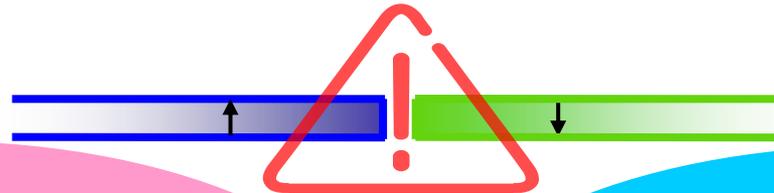
Consequences?



# CONSEQUENCES OF SMALL UL-DL SEPARATION

## Impact on legacy bands

- Interference from new band BS/UE: spurious emissions and blocking
- Additional BS/UE TX requirements for legacy band



## UE-UE co-existence

- Large UE power back-off to maintain unwanted emission levels
  - Coverage/throughput impact
- Relaxed TX emissions levels imply increased UE-UE interference
- Additional blocking resilience may be required for victim RX

## BS-BS co-existence/co-location

- Non standard solutions to maintain co-existence emission levels
- BS emissions required for co-location may not be achievable
- Additional blocking resilience for victim RX may be required for co-existence
- Blocking rejection for co-location may not be achievable



# EXCEPTIONS: RISK OF DEGRADED PERFORMANCE

The default 3GPP requirements ensuring compatibility are specified for the following frequency separations

## › BS-BS co-existence/co-location

- BS emissions: 10 MHz from operating band edge
- Out-of-band blocking: in general 20 MHz from operating band edge. Additionally 10 MHz for co-location

## › UE-UE co-existence

- UE emissions: large separation from channel band edge
- Out-of-band blocking: 15 MHz from operating band edge

## › Requirements specified for synchronized adjacent TDD systems

**Exceptions will be needed for smaller UL-DL separation with possible risk to performance**



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