

On the use of Postamble for relay link

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Purpose:

The purpose of this slide is to support proposed frame structure for multi-hop relay and postamble for relay link.

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On the use of postamble for relay link: #07/136

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Amble for the relay link

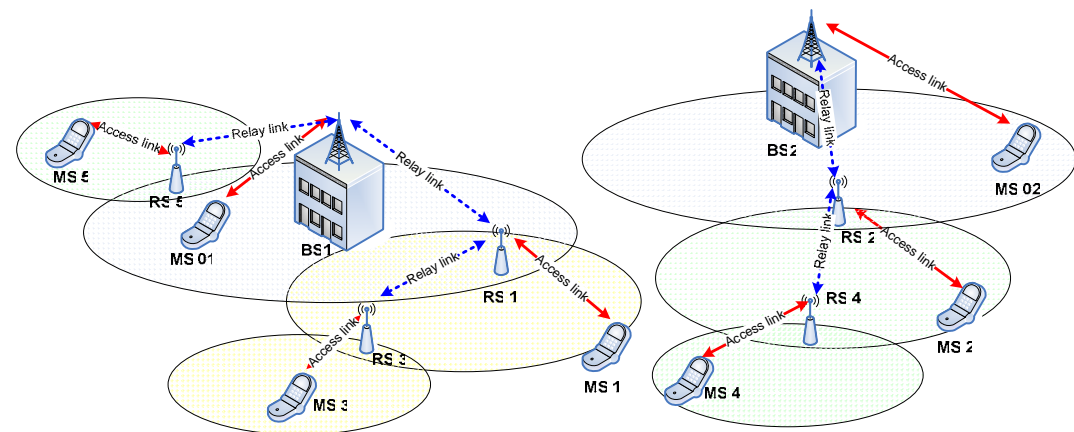
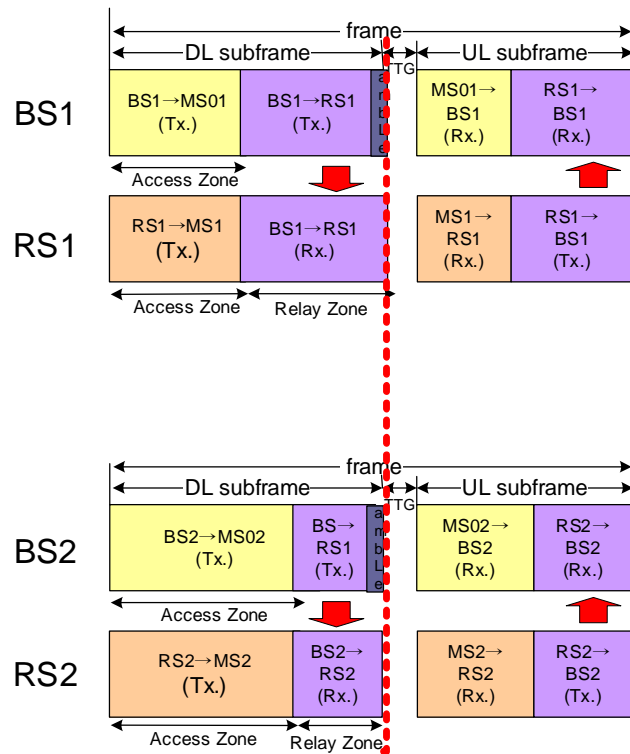
- Time Aligned amble location

- Synchronization for the relay link
- Neighbor scanning

- Flexible relay zone

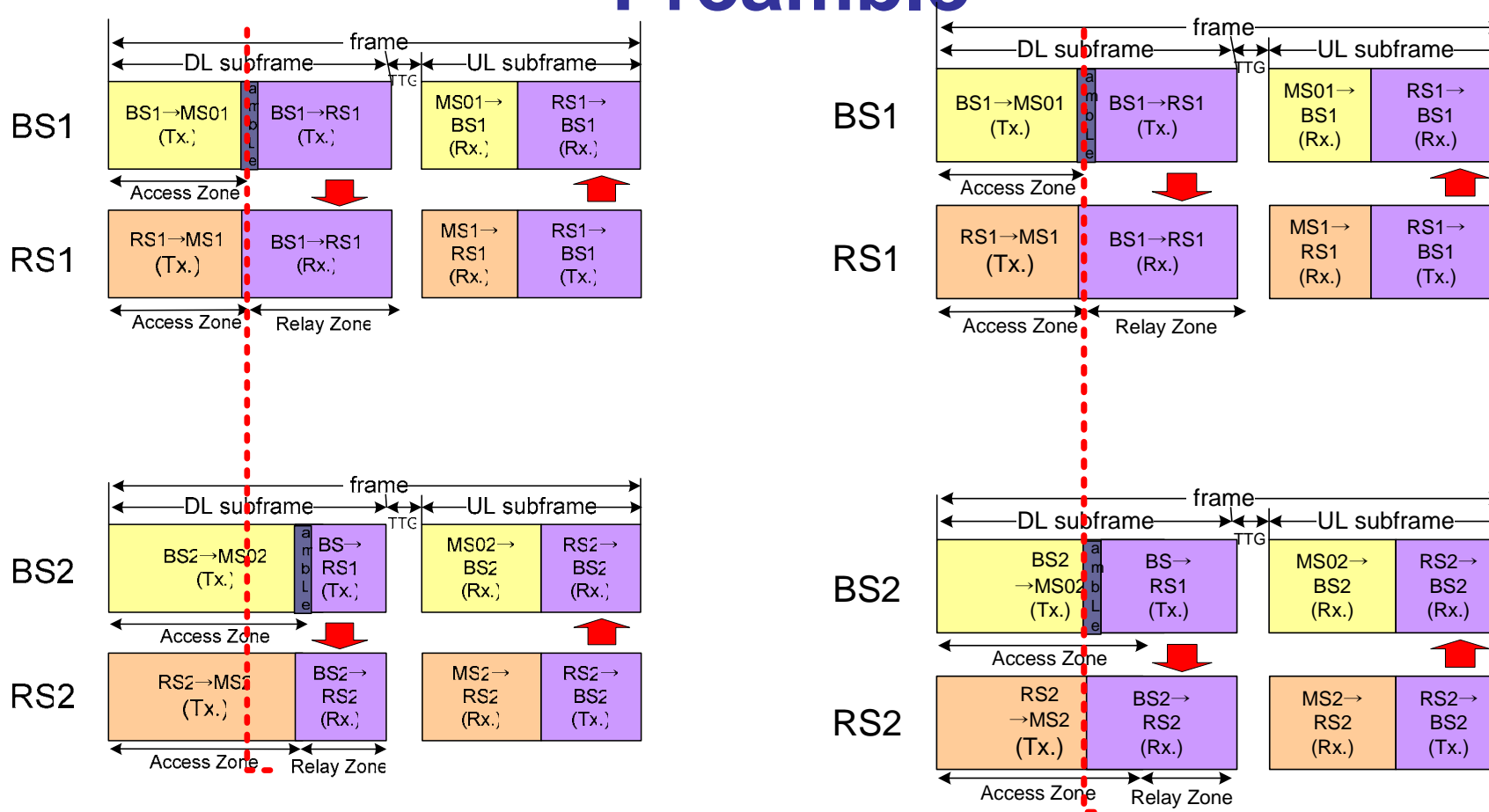
- To support Load balancing (access zone/relay zone)
- Postamble can support flexible access/relay zone

Amble location for the relay link -Postamble-



Both flexibility and time alignment can be satisfied

Amble location for the relay link -Preamble-



-flexibility is satisfied
However, time alignment is **not** satisfied-

-time alignment is satisfied
However, flexibility is **not** satisfied-

Both flexibility and time alignment can **not** be satisfied **simultaneously**

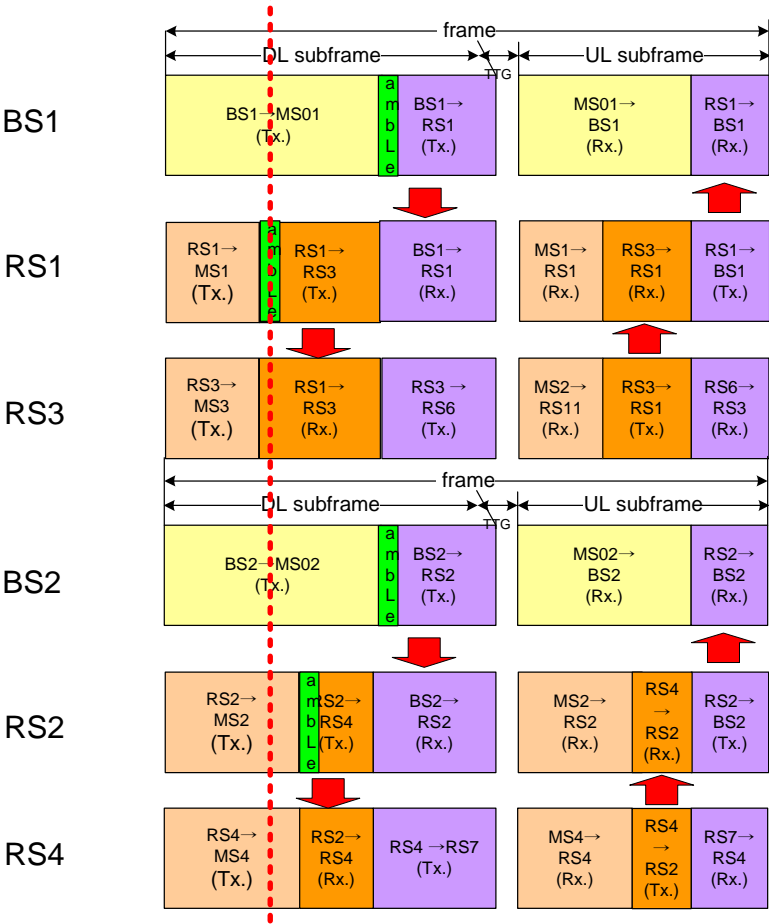
Amble location for the relay link -Postamble-



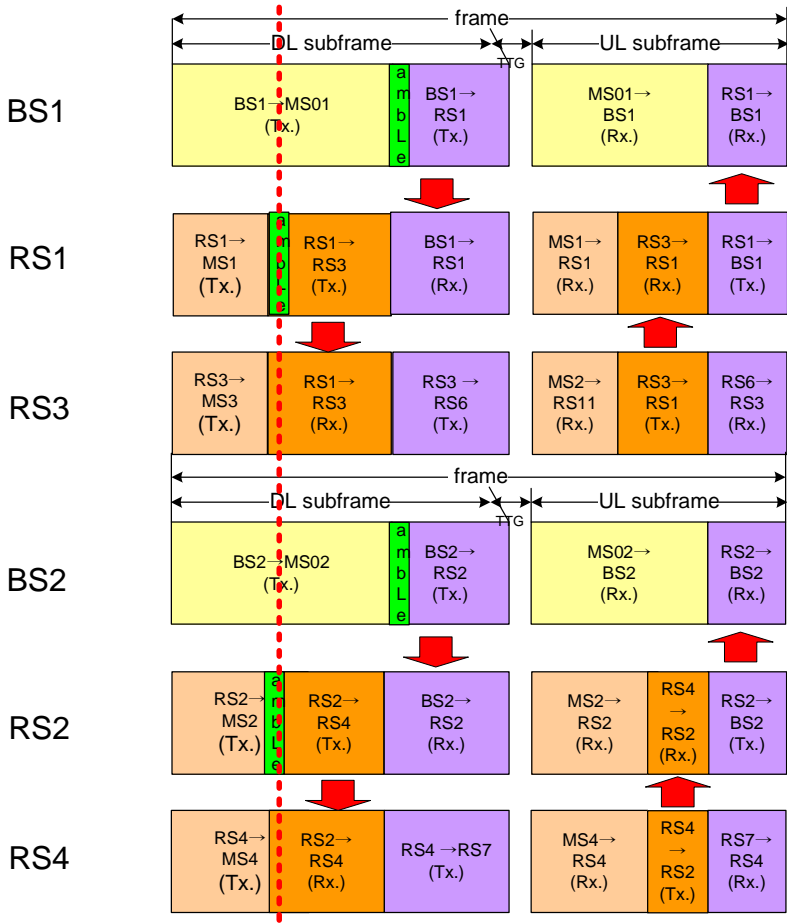
Both flexibility and time alignment can be satisfied simultaneously

Amble location for the relay link

-Preamble-



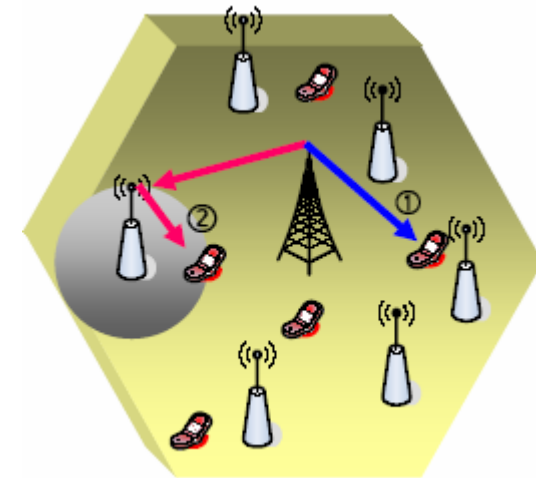
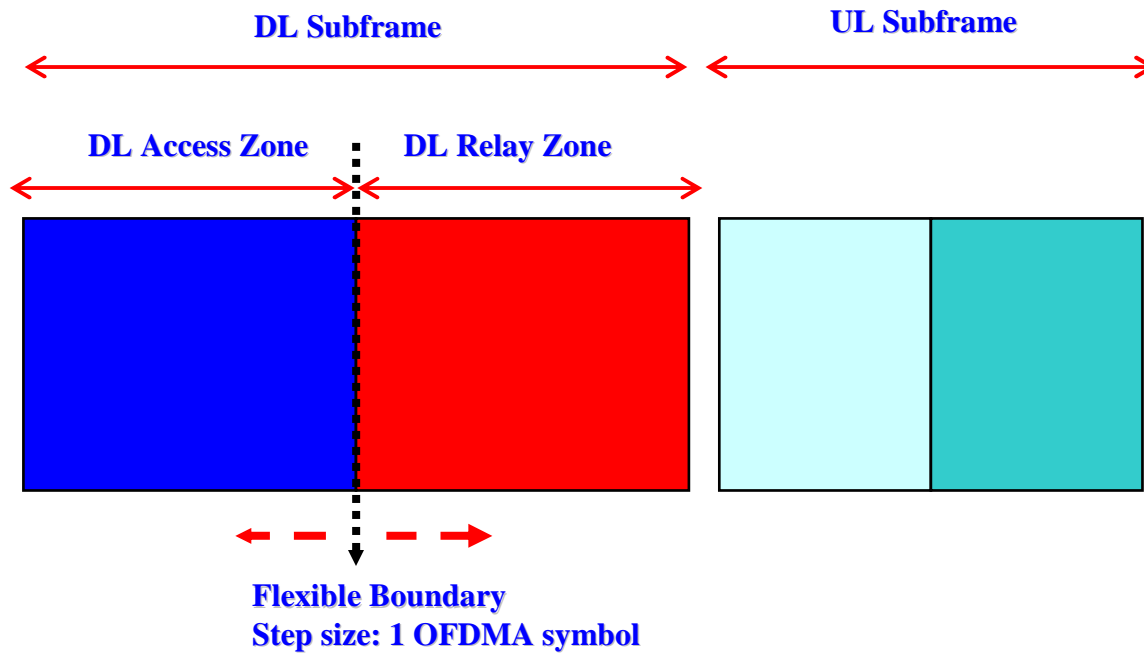
-flexibility is satisfied
However, time alignment is **not** satisfied-



-time alignment is satisfied
However, flexibility is **not** satisfied-

Both flexibility and time alignment can not be satisfied simultaneously

Performance Result -Load Balancing-



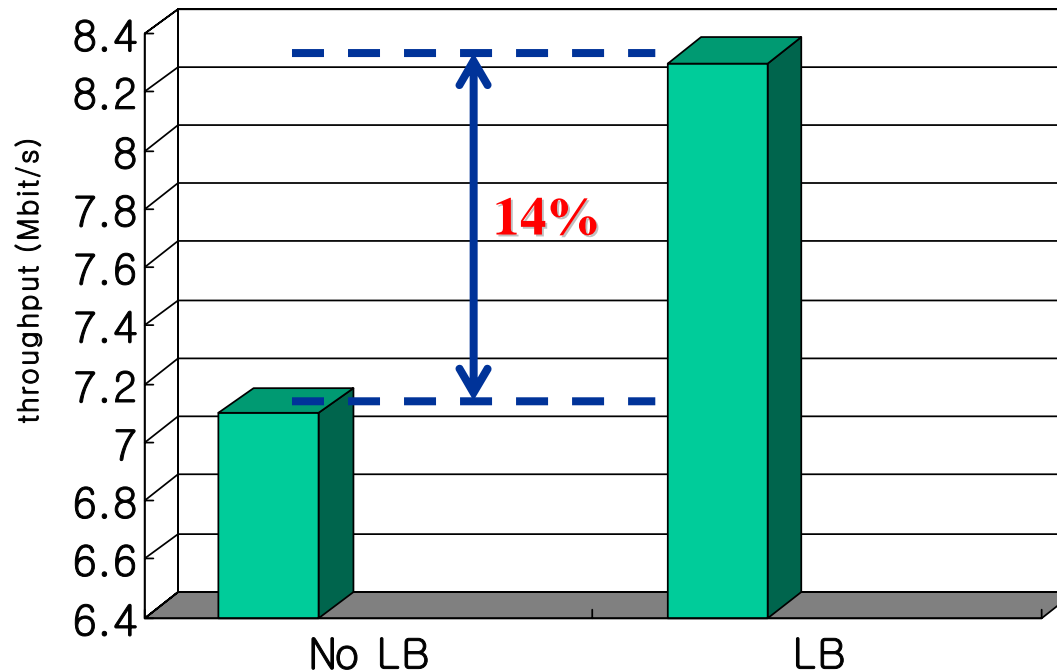
1 frame: 42 OFDMA symbols
DL subframe: UL subframe=27:15

Load Balancing (Simulation Parameter)

Frequency Band	2.3GHz
Bandwidth	10MHz
Cell layout	10 cells-wrap around
Cell radius	1km
Sectorization	No (omni antenna)
RS configuration	6 Fixed RS per cell, 2/3 position from MR-BS
BS Power	20W
RS Power	10W
Channel model (BS-RS link)	Path-loss: LOS(Winner model), Shadow fading:3.4dB
Channel model (BS-MS link/RS-MS link)	Path-loss: NLOS (Winner model), Shadow fading: 8dB Multi-path fading: ITU-R Pedestrian A model
Mobile speed	3km/h
Scheduling	Round Robin
Traffic model	Ethernet model (Average rate ~100kbps) Arrival process: Pareto distribution($\alpha=1.3$) Average packet size=2944.8bits

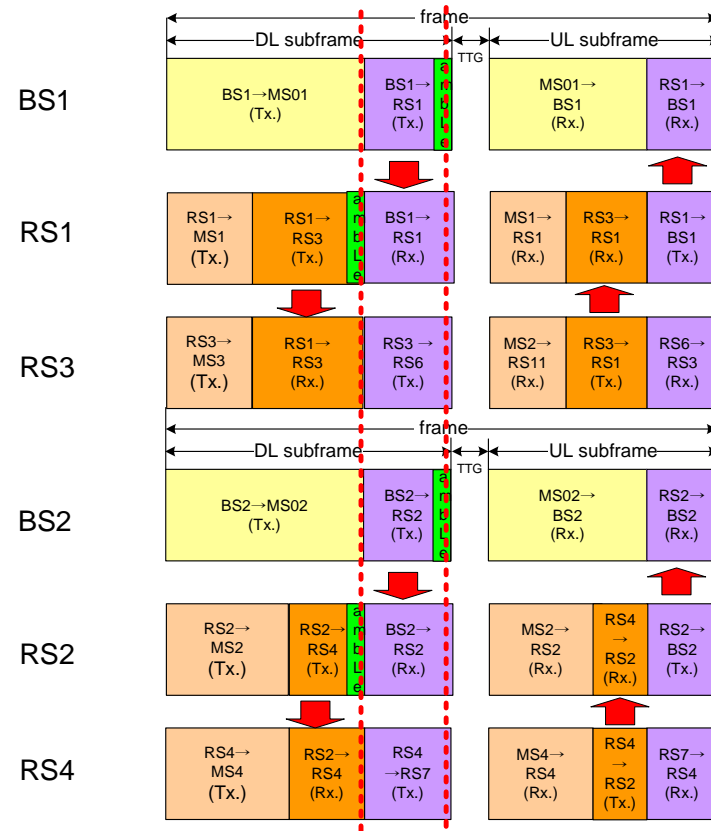
Cell Throughput Comparison

(No Load Balancing (No LB) vs. Load Balancing(LB))



Number of users in a cell: 100

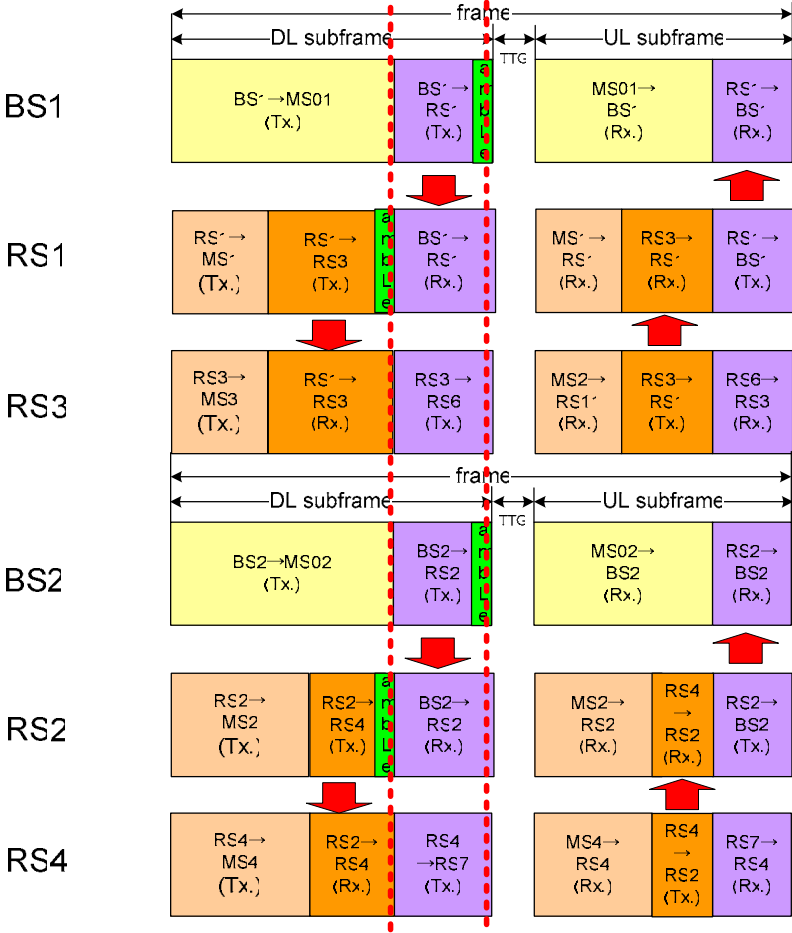
Amble location for the relay link -Postamble-



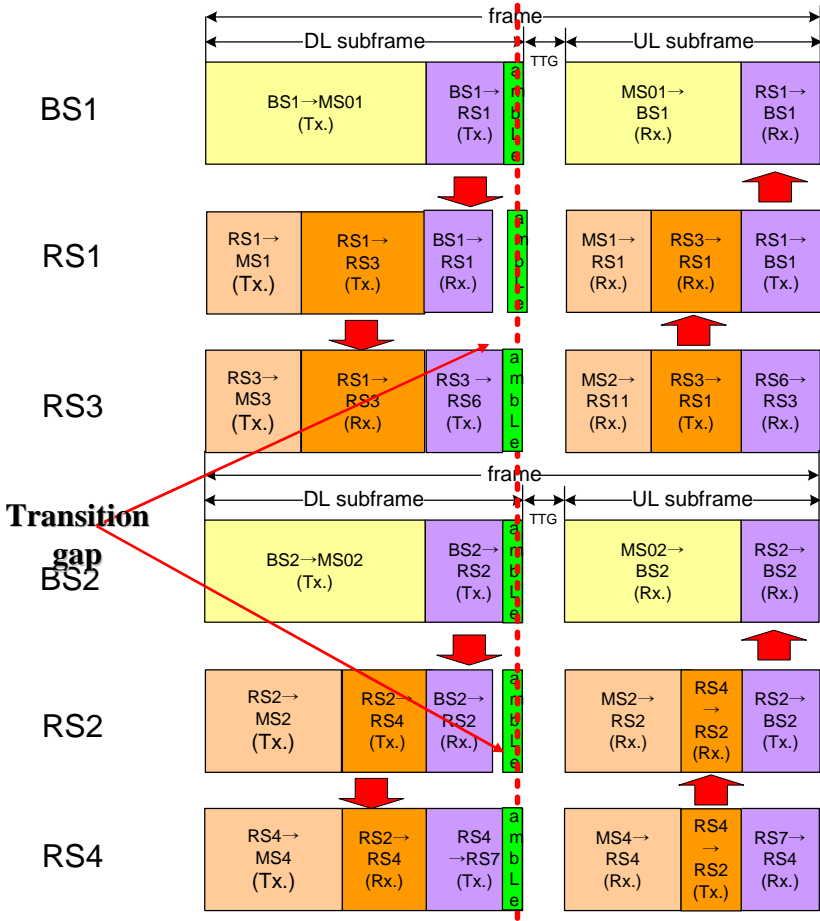
Both flexibility and time alignment can be satisfied simultaneously

Amble location for the relay link

-Postamble-



Amble at the end of relay zone



Amble at the end of DL subframe
 - Signaling to enable one RS to listen
 - Transition gap is needed

Conclusions

- Preamble
- Postamble
 - At the end of the relay zone
 - At the end of the DL subframe (Fully time aligned)
- Our recommendation: We prefer postamble at the end of the relay zone.