

A frame structure for mobile multi-hop relay with different carrier frequencies

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Xiaobing Leng, Gang Shen, Kaibin Zhang, Shan Jin
Alcatel Shanghai Bell Co.,Ltd.
388, Ningqiao road, JinQiao Pudong, Shanghai, China

Voice: +86-21-5854 1240
Fax: +85-21-5055 4554
E-mail: Xiaobing.leng@alcatel-sbell.com.cn

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None

Purpose:

To present a backward compatible frame structure for mobile multi-hop relay

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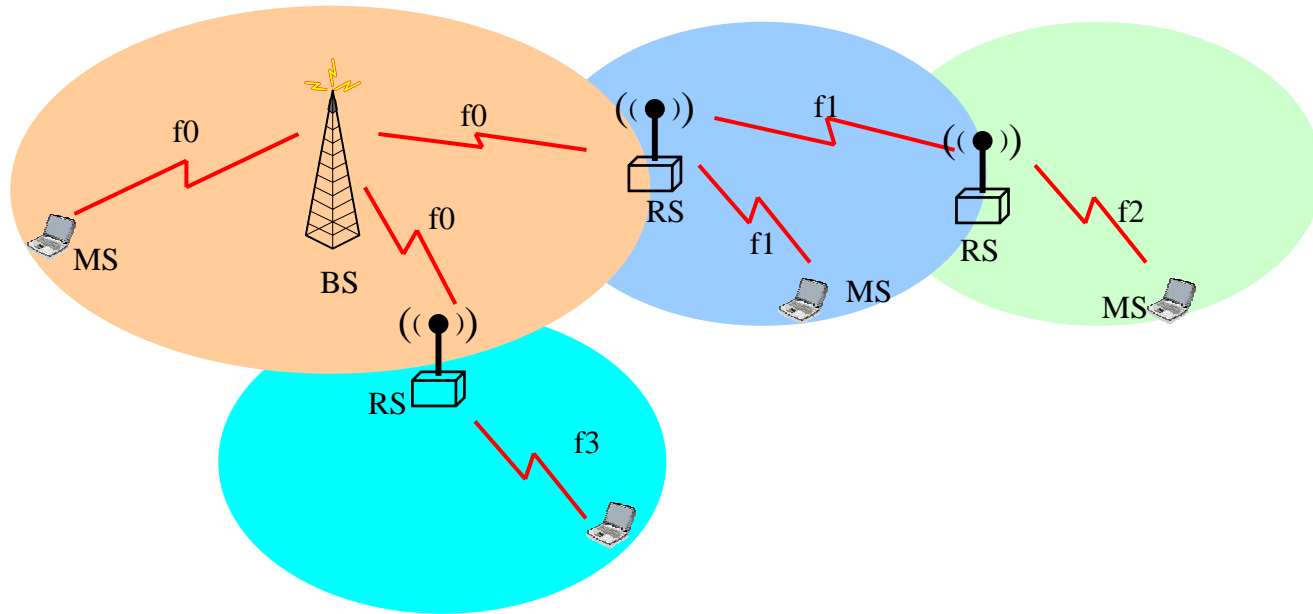
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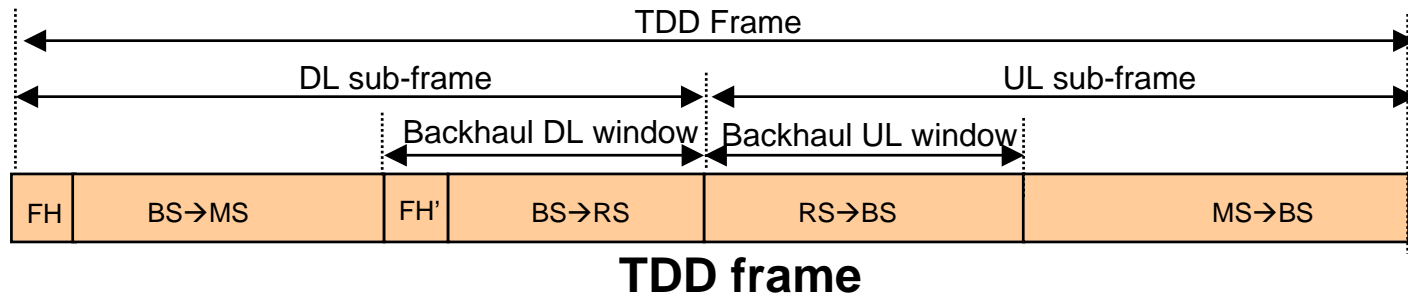
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General ideas



- Extending 802.16 coverage by multi-hop relay
- Backward compatible with PMP mode
- RSs and BS have different carrier frequencies
- RS acts as BS to its subordinate node(MS/RS); and RS acts as MS to its superordinate nodes (BS/RS)

Frame structure

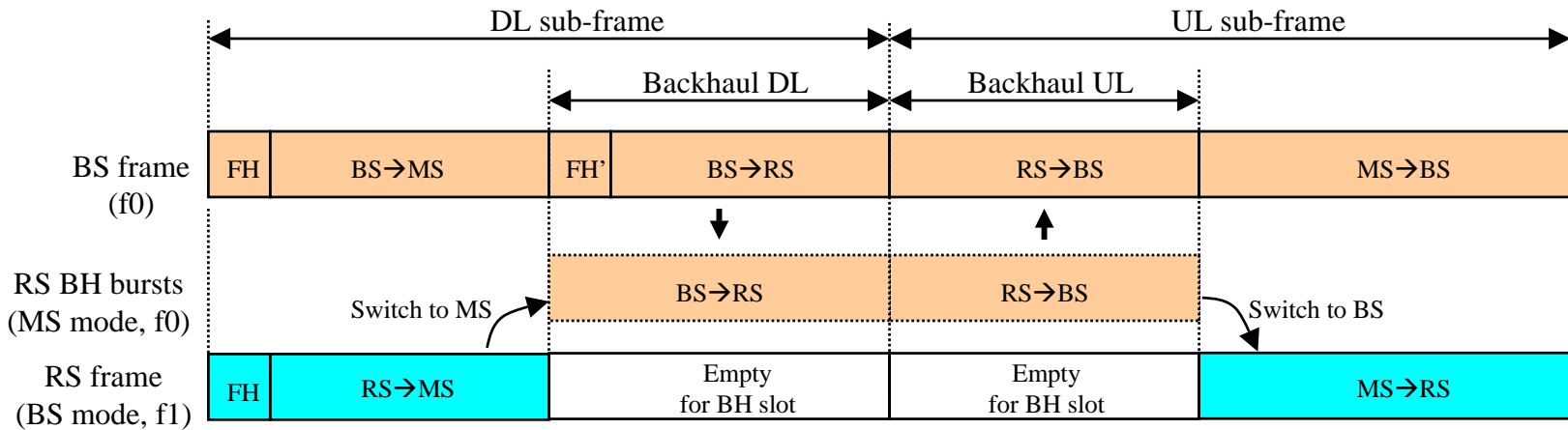
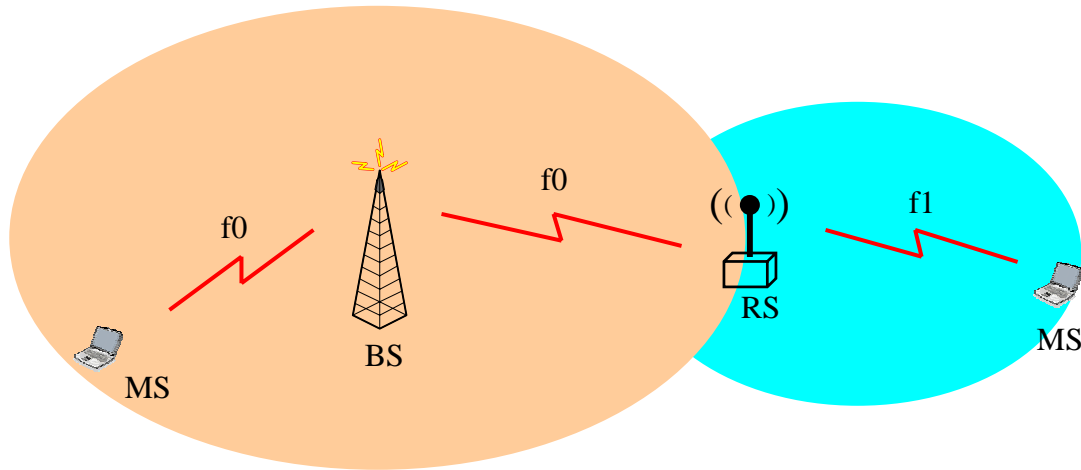


FH Frame Header, e.g. preamble, FCH,DL_MAP,
UL_MAP, DCD, UCD

FH' FH copy with different preamble and simplified
FCH,DL_MAP,UL_MAP,DCD,UCD

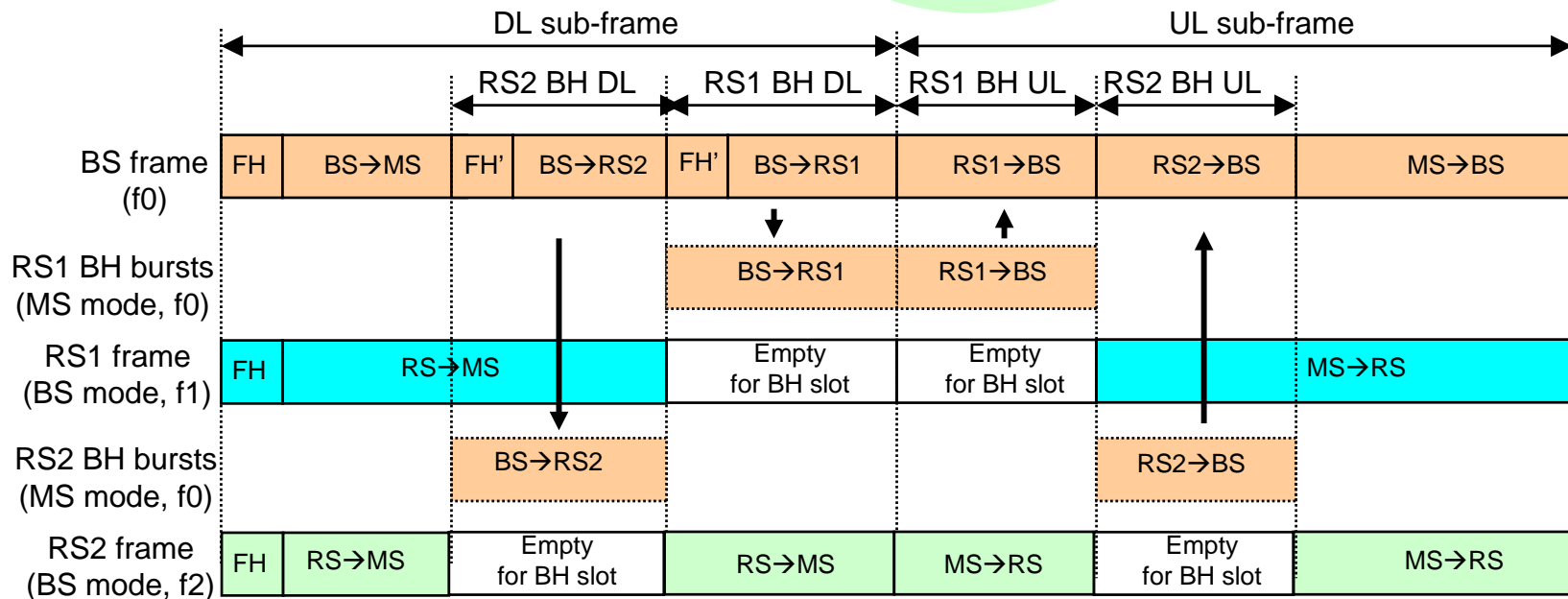
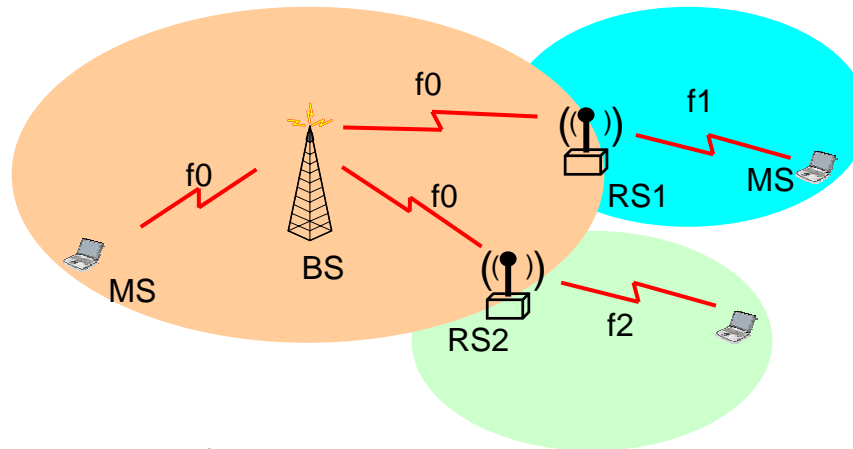
- FH is for MS; FH' is for RS and transparent for MS
- BS can flexibly allocate RS backhaul window (location and length) based on bandwidth requirement

Application example 1 (one relay)



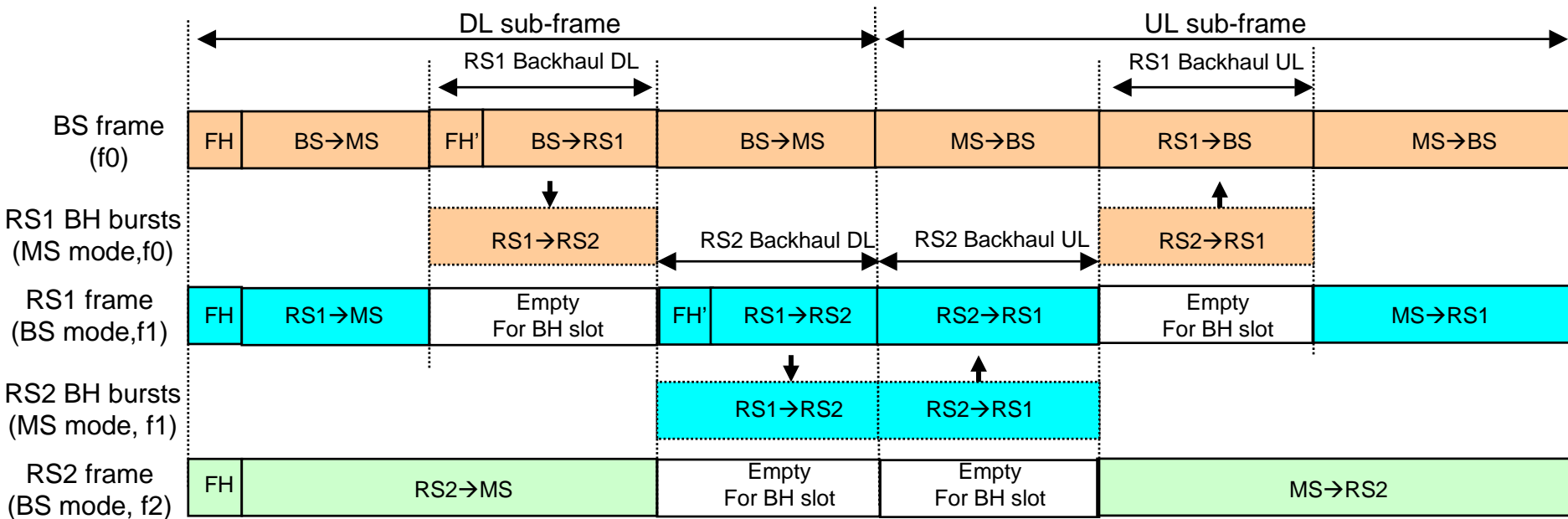
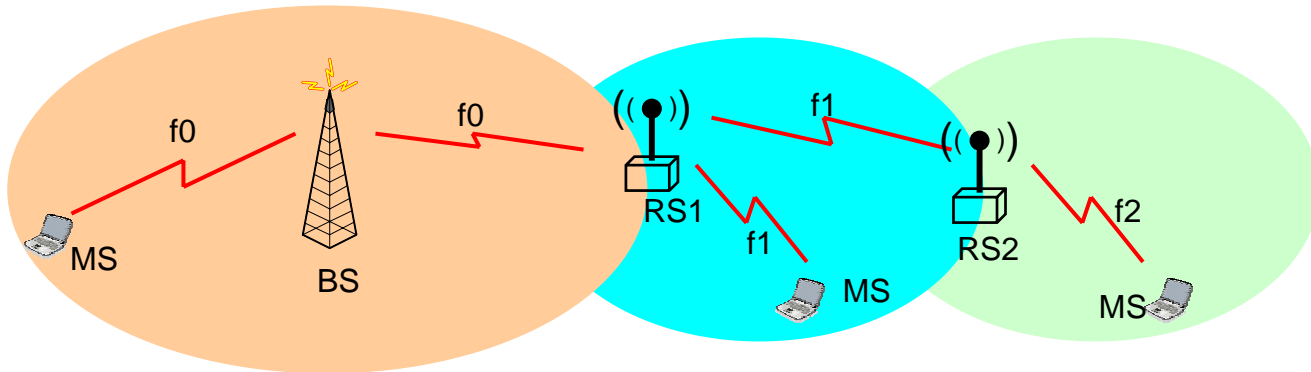
BH: backhaul

Application example 2 (multiple relays)



- FH's for different RSs are the same.

Application example 3 (multi-hop)



Summary

- RS works in BS mode and MS mode by turns
- RS backhaul occupies part of radio resource of its superordinate node (BS/RS)
- Low multi-hop latency as traffic can be scheduled in one frame
- All RSs are controlled under its attaching BS and new RS messages should be defined
- All BS and RS work in synchronization with the frame duration and starting time