

Link Characteristics Information for Mobile IP

`draft-daniel-mip-link-characteristic-02.txt`

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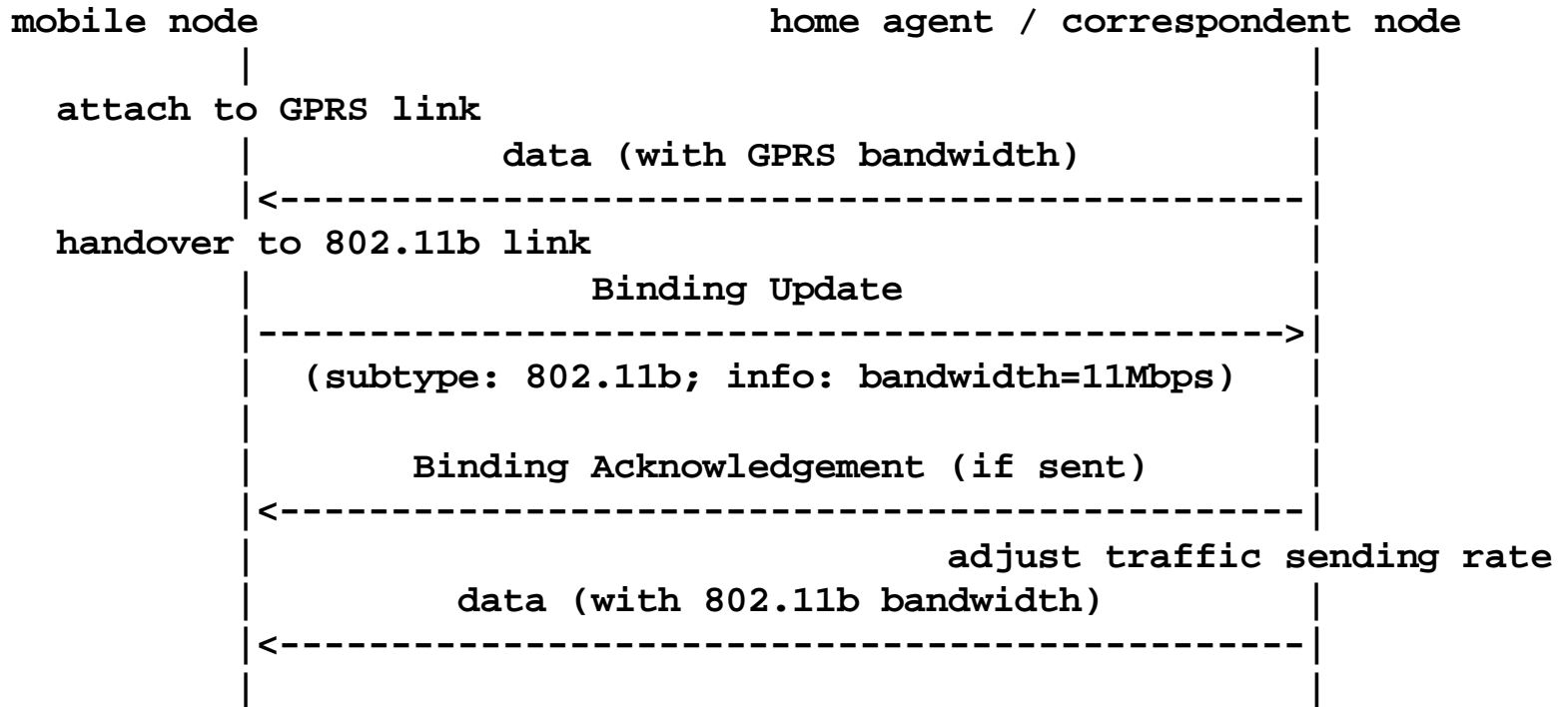
Topics

- Background
- Thoughts and concerns
- Possible Improvements
- Conclusion

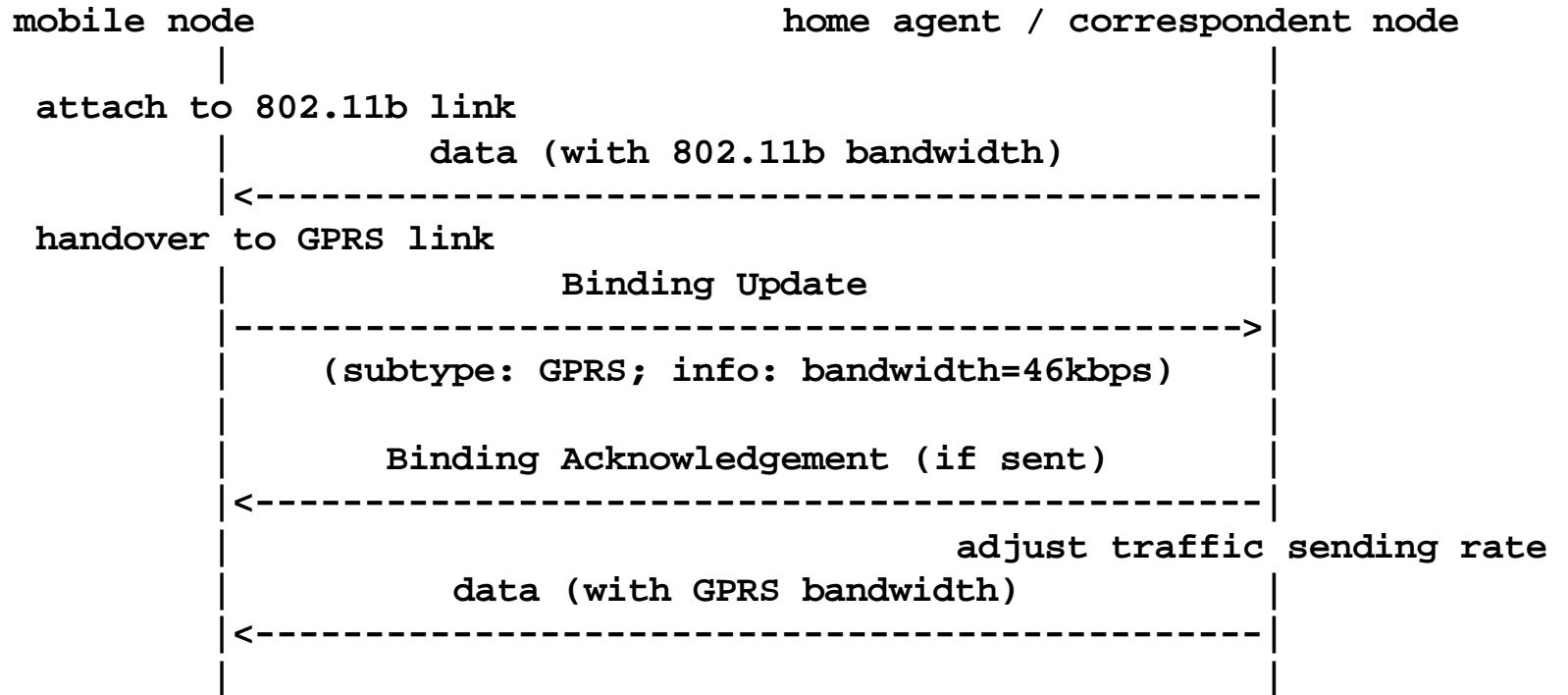
Background

- Link characteristics and bandwidth may change radically due the handover
 - Especially during vertical handovers e.g. from WLAN to GPRS
- As a result of the handover transport layer protocols might have difficulties to adjust to new link properties
 - E.g. well-known problems with TCP
 - Overbuffering and under utilization of the link
- Mobile Node has knowledge of the links it is attached to -> share this link specific information
 - Peer node IP stacks may utilize this information and do optimizations on the transport layer
 - HA could do traffic shaping in reverse tunneling case

Example: GPRS to WLAN



Example: WLAN to GPRS



Thoughts and Concerns

- Link Characteristics options are a tool to signal link information
 - Similar to Quick-Start
 - Peer nodes may or may not utilize the link information on transport layer e.g. with TCP
 - Not only limited to carry bandwidth information
- Requires support on transport layer stack implementations but this is out of scope on this draft
- Currently there is no robust way to know/inform the real link bandwidth but rather the nominal link bandwidth
- "MIP layer" is the first access technology independent layer to do required signaling without introducing a new IP layer protocol
- MIP signaling provides the security for the link characteristics information delivery

Possible Improvements

- Link characteristics option subtype codes could be aligned with IANA assigned numbers for SEAMOBLY when applicable
- Could we use something similar to NED here?
- Link information information could be extended to more than just bandwidth

Conclusions

- Link characteristic options are meant only for signaling link related information from mobile node to the network
- To benefit from these options transport layer protocols or traffic shaping nodes need to utilize the link information
- Helps e.g. optimizing (vertical) handovers on transport layer

Any Questions / Comments?

