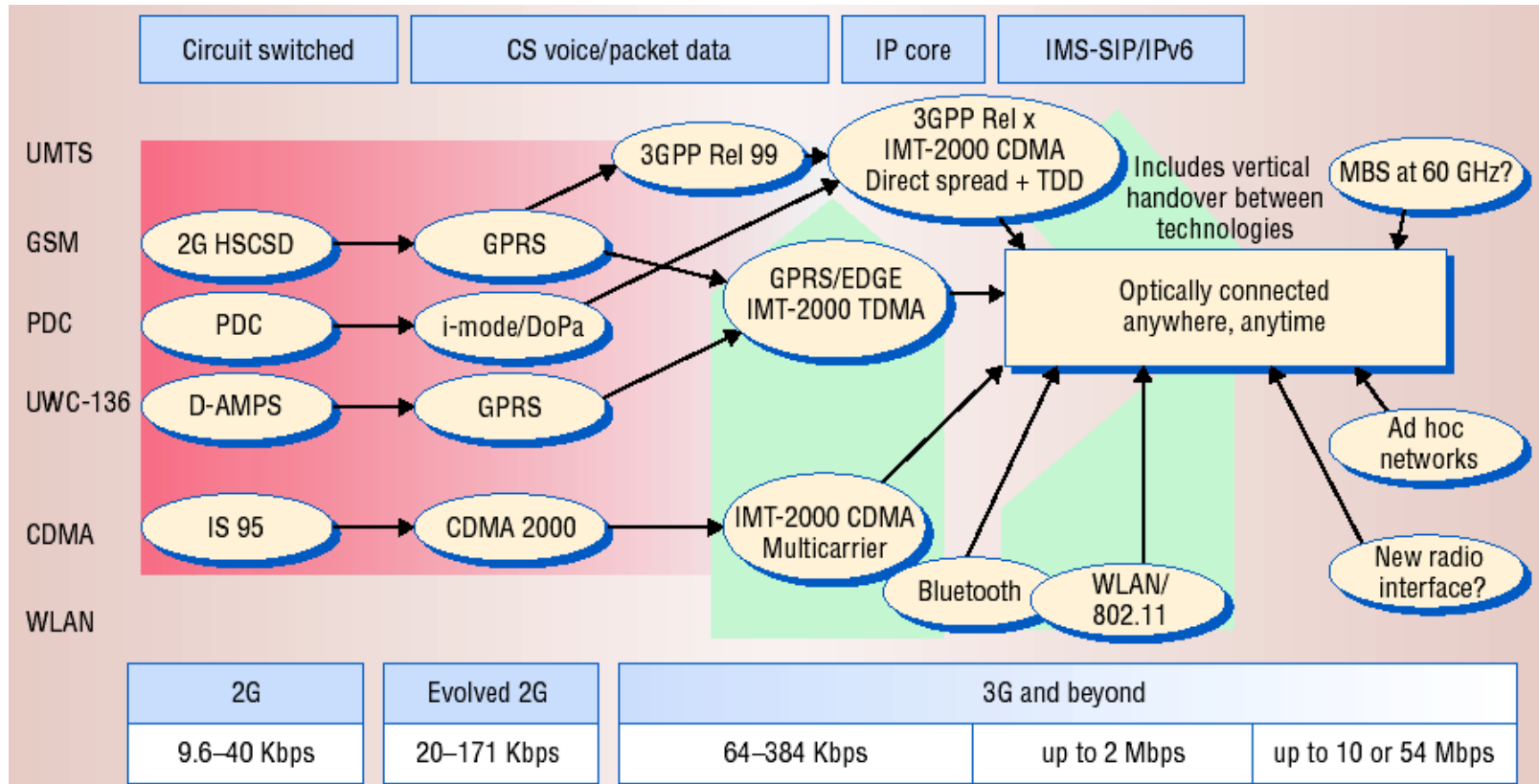


Mobility Support for Future Wireless Networks

Liping Bai
Computer Engineering Lab
Delft University of Technology

- **Overview on Wireless Networks Evolution**
- **Requirements for Future Wireless Networks**
- **MIPv6: Mobility Support for Future Wireless Networks**
- **Research Challenges**
- **Conclusion**

• Overview on Wireless Networks Evolution

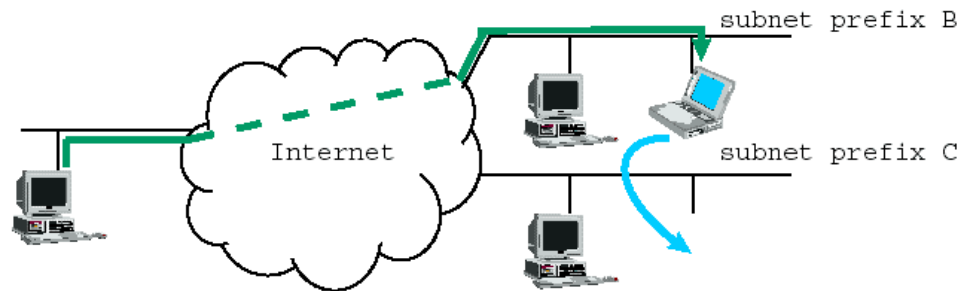


- **Requirements for Future Wireless Networks**

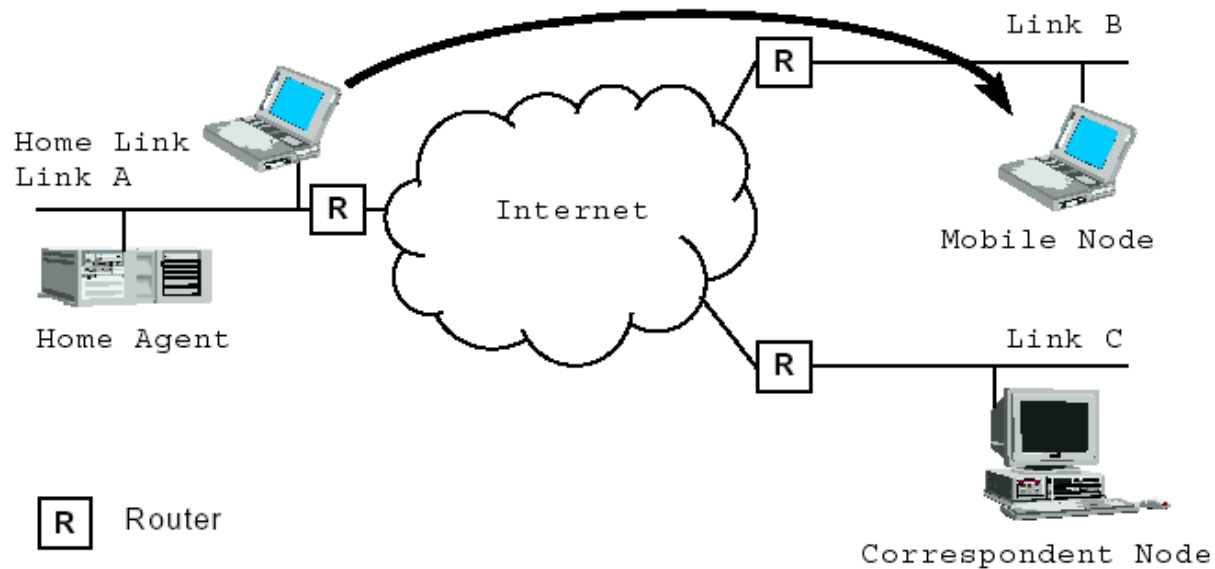
- All networks elements support IP
- Interconnection between heterogeneous wireless networks
- Mobility management for a globally networked environment
- Security mechanisms across wireless access networks

- **Problems to support mobility**

- A mobile node could not connect to a foreign networks with the home IP address
- The data packet could not be delivered to the mobile node correctly when it moves into a foreign networks

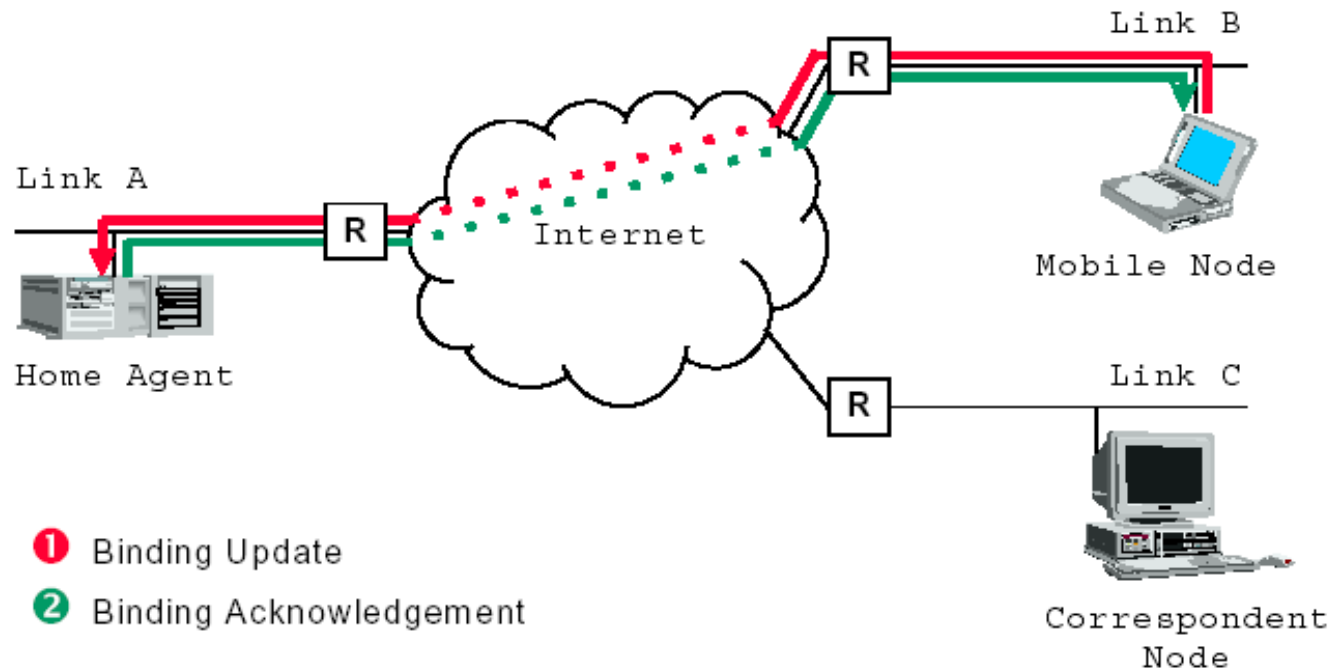


- **Mobile IPv6: A IETF Standard for Mobility Support**



Link A is the home link of the mobile node, which has moved to the link B.

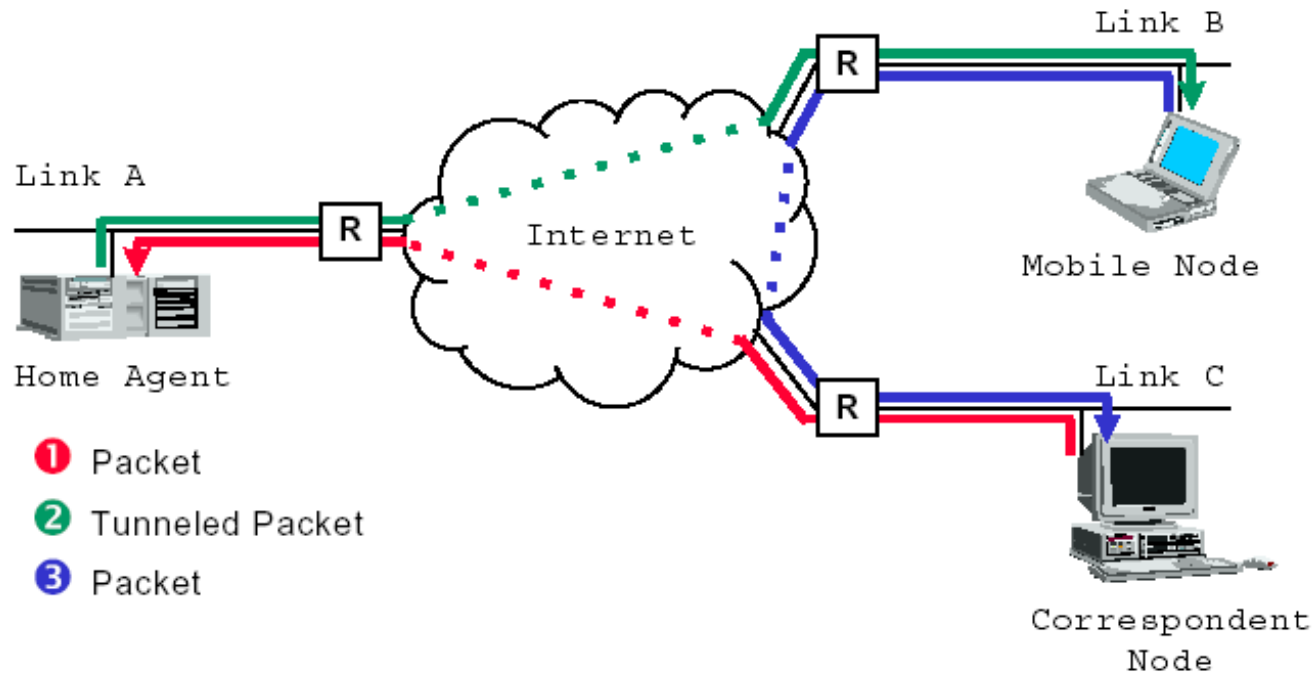
• Home Agent Registration



The mobile node sends a Binding update to his home agent.

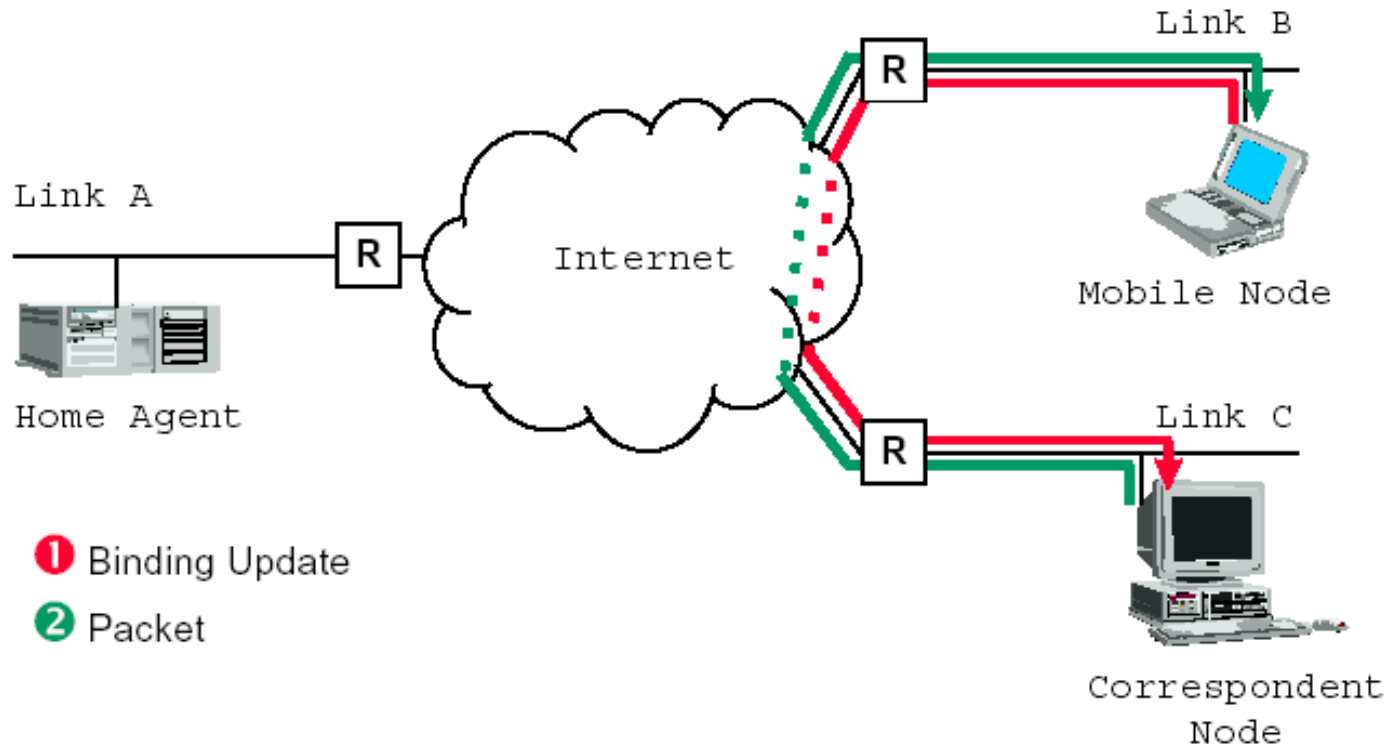
The home agent accepts the Binding update and returns a Binding Acknowledgement

• Triangle Routing



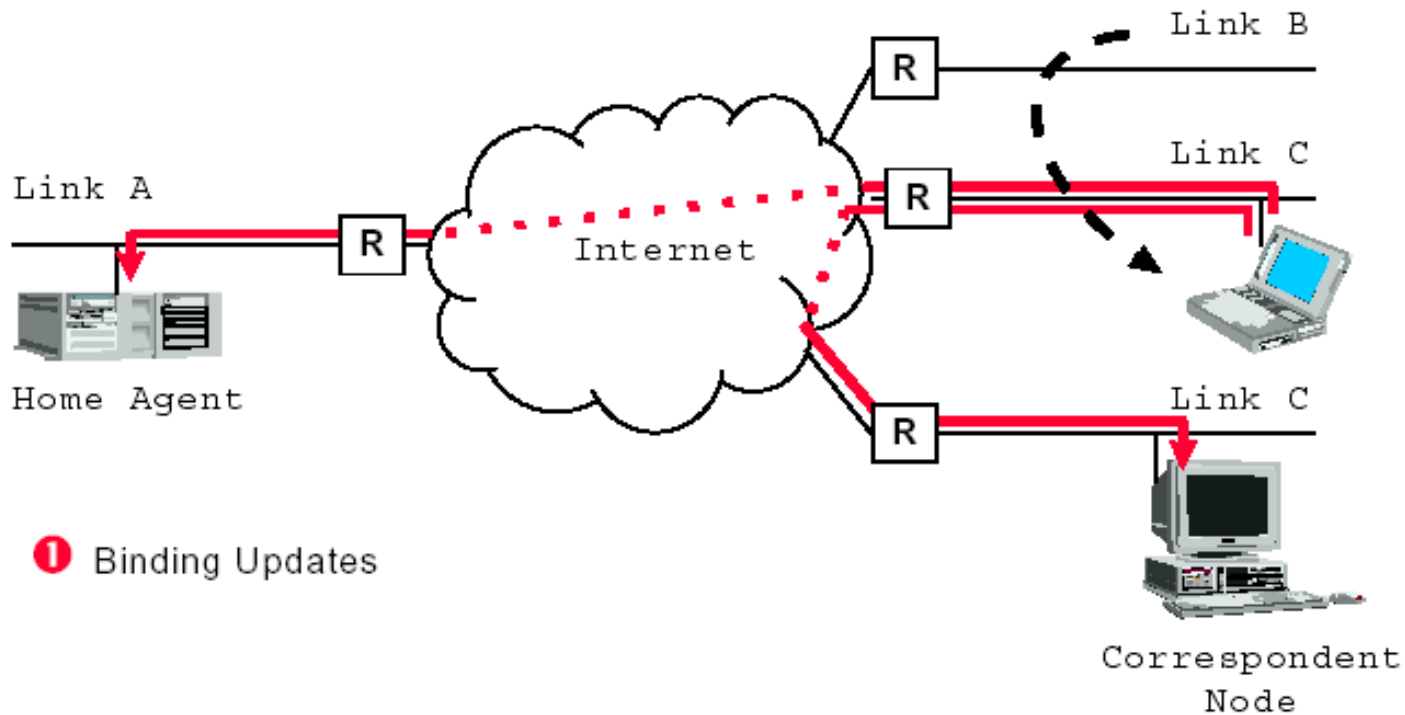
The home agent intercepts packets addressed to the mobile node's home address. The Packets can be tunneled to the current care of address of the mobile node.

• Route Optimization



The mobile node sends a Binding Update to a correspondent node.
The correspondent node is now able to send packets directly to the mobile node.

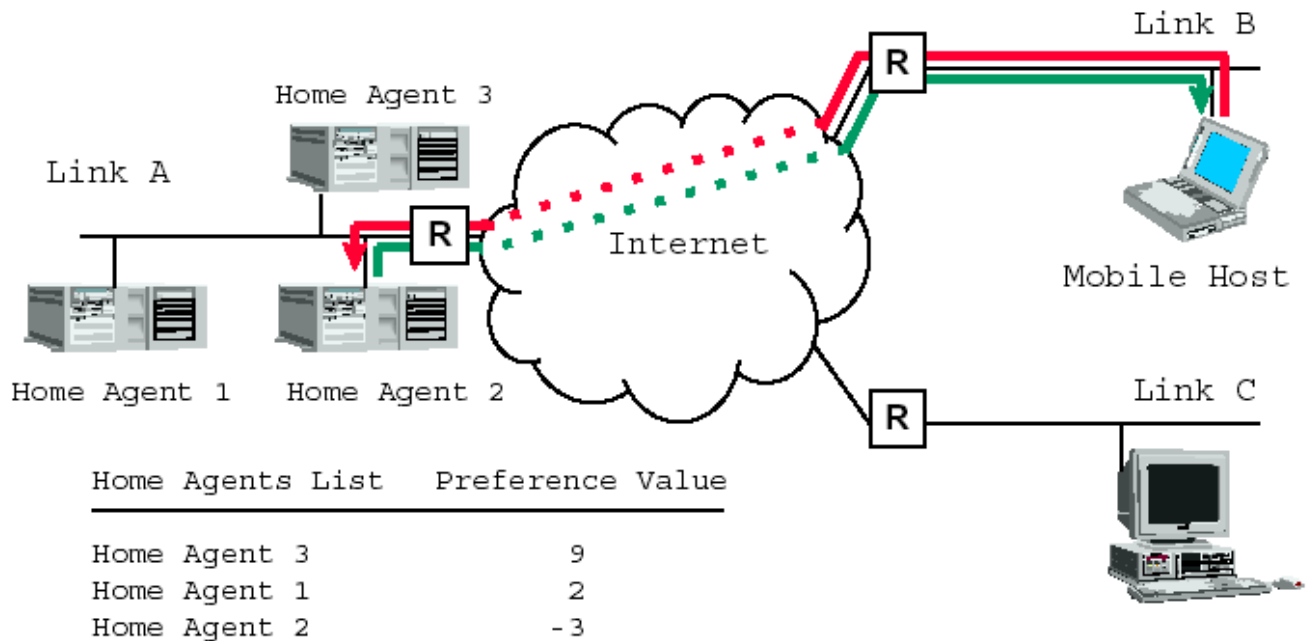
• Location Updating



1 Binding Updates

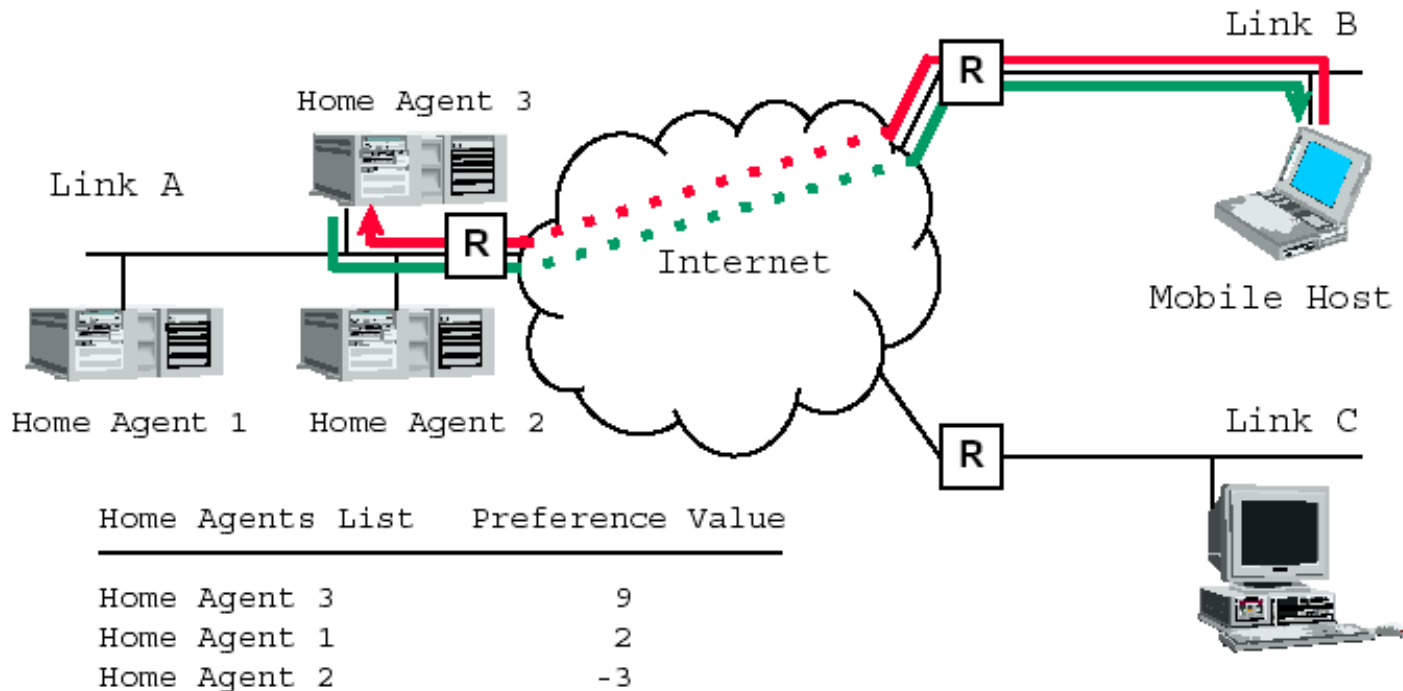
The mobile node sends Binding Updates to its home agent and other corresponding nodes when it moves to a new link

• Home Agent Discovery



- 1 Binding Update to Home-Agents anycast address
- 2 Binding Acknowledgement including the Home Agents List; rejects the registration request

• Home Agent Discovery



- 1 Binding Update to Home Agent 3
- 2 Binding Acknowledgement, registration OK

• Research Challenges

- How can a single platform, which possibly combines general-purpose processing with reconfigurable hardware processing, be defined to meet all the mentioned functional and temporal requirements?
- How can all the needed applications be mapped onto this platform? Moreover, how can we (semi-) automatically perform the mapping without much human input?
- How can the power consumption of the proposed platform be minimized without sacrificing much the performance?

- **Conclusion**

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- Research Challenges

Thank you!

Questions?