

# Chapter 6 Conclusion and Future Work

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## 6.1 Conclusion

In this thesis, a framework for supporting multicast mobility has been designed. The concept of this framework can support WiFi network both on IPv4 and IPv6 networks. The contribution of this thesis is to find the way to reduce handover latency time, which means including handover delay packet loss and jitter.

However, from the output result on OPNET Medeler network simulation software in chapter 5, it can be confirmed that the designed framework of this research achieves the aim of the research in this thesis.

Those methods and processes within the designed framework are a key factor that can produce an output result for achieving the research aim that can be analysed and classified into:

- Foreign agent arranges an IP address for a new mobile node before it becomes a member within the network. This way it helps the foreign agent to reduce the time for searching an available IP address on their database, including negotiation time between foreign router and new mobile node. It is affected from registering CoA in advance module.
- As it knows a new mobile node member in advance the foreign router can establish a path to multicast group early.
- The results of this research support the idea that when mobile node connected to the multicast tree early, the process of rebuild multicast tree can happen early also. This saves time for connecting to multicast tree.
- Helps Mobile IP protocol to do the process of Binding update to home agent early.
- The results of this investigation show that mobile node can use the new IP address to join multicast tree in advance due to already having the new IP address.

- Reduces time in the process of becoming a member in a new multicast group.

## 6.2 Recommendation for Future Work

From this research, there are many things that can be improved, modified and developed for making this framework more powerful, such as:

- Include the algorithm or process for predicting potential foreign agent in advance. This is to save the resource and bandwidth on the wireless network. Further work is required to establish this.
- Design a new algorithm or method for finding higher performance of the foreign agent.
- Find the way to store CoA address, in case of receiving lots of CoA in advance.
- Improve the performance of framework in terms of robustness such as when there are lots of mobile nodes within the wireless network.
- Increase the performance of framework in terms of scalability for supporting more mobile nodes. This is an important issue for future research.
- Improve framework for supporting large scale multicast tree.
- Improve framework for supporting a variety of applications and multimedia sizes.
- Extend framework for supporting many-to-many delivery applications. Future studies on this topic are therefore recommended.