EXPLORATIONS ON ENGINEERING LETTERS (EEL)
VOLUME 1, ISSUE 1 (2016):PP.224-229
SANA ACADEMIC PRESS

Innovative Channel Distribution Information in Heterogeneous Network

Rekha.R[1], S.Gowri[2], N.Venkatesan[3]
[1]*M.Phil Research Scholar, St.Peter's University, Chennai.*
[2,3] *Assistant Prof. Dept. of Computer Applications, St.Peter's University, Chennai*
rekharajendranoct10@gmail.com

Abstract-- *The Mobile networks with the option of explained small cells and WiFi access points can be used to further boost the full traffic capacity and service level. Small cells along with WiFi access points are projected to carry over 60% of all the global data traffic by 2015. With the explained of small cells on the radio access network levels, there is a focus o n providing operators with more control over small cell selection while reducing the feedback burden.We proposing that load-aware network selection approach applied to Innovative Channel Distribution Information in Heterogeneous Networks (HetNets). Alternately, some regulators have proposed delegating users more involvement on the selection decision. But with retaining to the traditional network-centric selection approach.*

Keywords: *Heterogeneous network, macro cell, small cell, WiFi, network selection,channel distribution information, channel state information, game theory.*

I. INTRODUCTION

To manage with the faster and increasing demand for mobile data driven largely by mobile video and personal communications, low power base stations (BSs) are being deployed in dense urban areas to complement the existing cellular architecture.Such a HetNet consists of macro cells (MCs) coexisting with low power nodes composed of small cells (SCs), as well as using WiFi access points (APs).

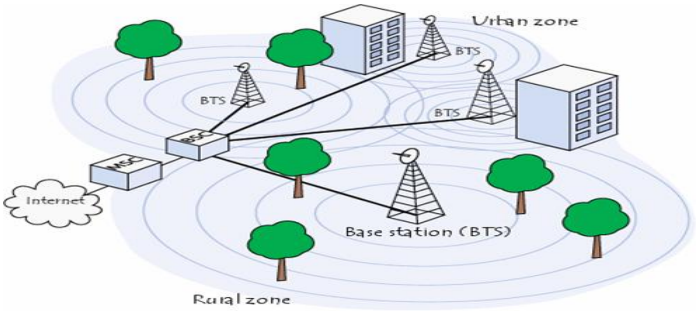

Fig.1- Accessing BTS in Rural Zone as well as Urban Zone

This will allow for better overall radio resource management, provide improved overall mobile-broadband performance, and allow operators to maintain a more seamless user experience. The limitations of existing proposed systems might not be realistic in HetNets due to the limited capacity.The back links and varied ownership of network devices.Obtaining/estimating all the channel gains on each of the resource blocks is highly impractical. Since it leads to an enormous amount of control overheads. But we overcome into that,

densification of the network with SCs is a way to get more capacity from existing spectrum. Network access selection is a major concern. One approach is to distribute the network selection decisions over the users, as the device is the only entity aware of actual connectivity conditions (e.g., radio conditions, throughput over existing connectivity. It is very important that the impacts and the performances of any proposed policy are theoretically investigated.

II. MATERIAL AND METHODS

We define the channel quality indicator (CQI) which represents a measure of the channel quality.We compare the values of the CQI thresholds at the non-cooperative equilibrium.The users to the MC network both above and above the CQI threshold. Rapidly increases to minimize the probability of connecting to the SC network. The association schemes actually implemented by network operators are fully centralized. Distributed joint radio resource management (JRRM) mechanisms. This is gaining in importance mobile users may be allowed to make autonomous decisions in a distributed way.In the same trend, proposed a distributed algorithm which jointly determine the amount of radio resources that MCs should offer to SCs. The association rules that decide which mobile users should associate with SCs.

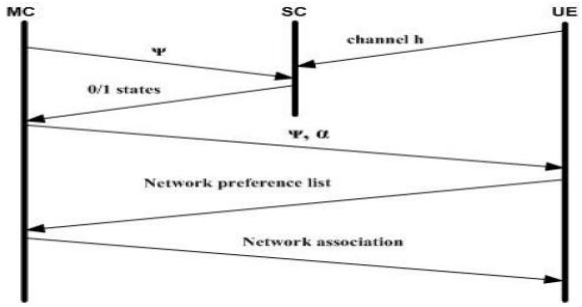

Fig-2- Schematic diagram showing the set of parameters/values communicated among MC/SC and UE, and the set of steps implemented at MC/SC and UE.

When it comes to understanding wireless connectivity, you first need to understand that not all types of wireless applications are equal. Without a good working knowledge of wireless technology, it sometimes gets difficult to understand which type of wireless band radio should be employed to maximize connectivity in a particular situation. Since each wireless network behaves differently and is capable of emitting different strengths and weaknesses, it is always a good idea to calculate the requirement prior to choosing the most reliable connection. 900 MHz Frequency transmits information from mobile station to base station. This frequency is used in several regions of the world, specifically Africa, Australia, Europe, Middle East and Oceania. Use of 900 MHz frequency is mostly preferred for outdoors fixed wireless application. And a merit of this High Frequency was Reliable Connectivity and Signal Strength: The primary advantage of 900 MHz range is the reliability of connection and signal penetration. This can be understood from the Path Loss Formula. A Path Loss Formula is used to calculate the loss of signal over the distance between the transmitter and the receiver. Further Reach: 900 MHz frequency fixed radio link can be almost 2.67 times farther in distance than a 2.4 GHz connection.Better Penetration: A longer wavelength of 900 MHz transmission allows the connection to easily penetrate amongst dense materials

such as tree line between sites etc. This property helps hugely in benefiting two linking sites where dense veget ation would otherwise cause hindrance.

A. RESULTS

Let us consider the case where choosing Number of limited users connected per system at the equilibrium as a function instead of two we have n users choosing to connect either to the SmallCell or to the MacroCell network.

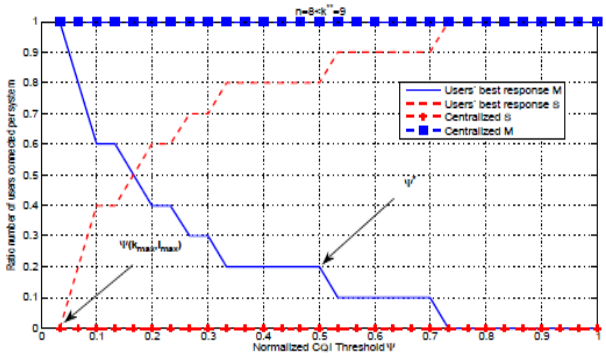

Fig-3. Number of limited users connected per system at the equilibrium as a function**.**

Let us consider the case where choosing Number of **n** users connected per system at the equilibrium as a function instead of two we have n users choosing to connect either to the SmallCell or to the MacroCell network.

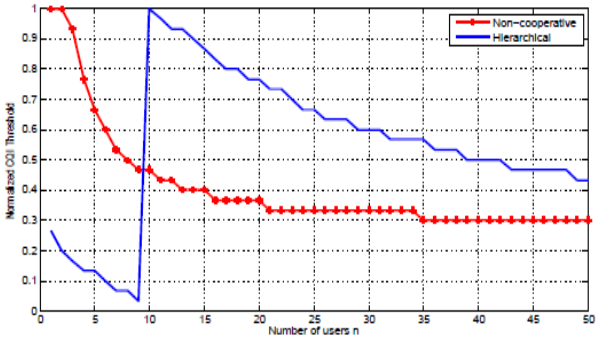

Fig-4.CQI threshold at the equilibrium as function of increasing number of competing users n.

Let us consider the case where choosing **Average users** connected per system at the equilibrium as a function instead of two we have n users choosing to connect either to the SmallCell or to the MacroCell

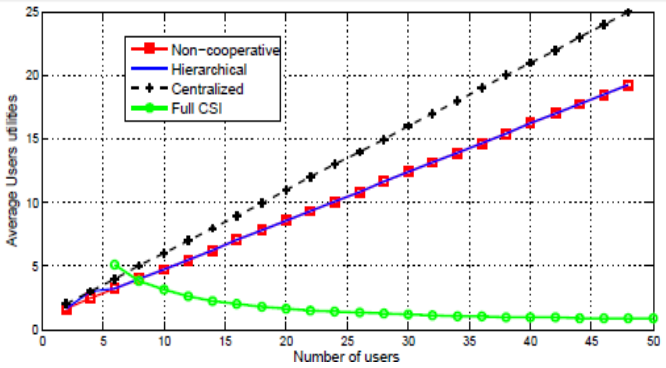

Fig-5. Average users' utilities for increasing number of competing users.

Let us consider the case where choosing **Only Competing users** connected per system at the equilibrium as a function instead of two we have n users choosing to connect either to the SmallCell or to the MacroCell

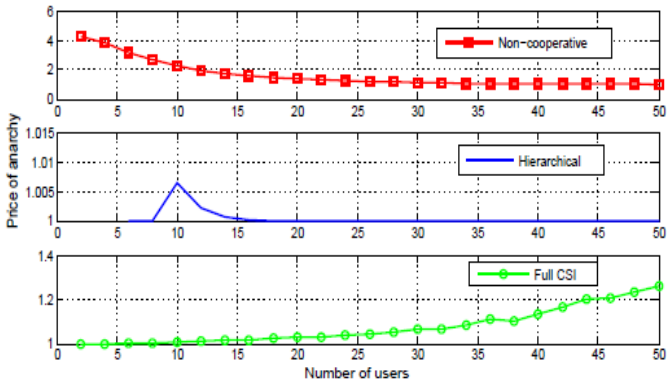

Fig-6. Increasing number of competing users n.

III DISCUSSION

About the Bayes' Theorem is a theorem of probability theory originally stated by the Reverend Thomas Bayes. It can be seen as a way of understanding how the probability that a theory is true is affected by a new piece of evidence. It has been used in a wide variety of contexts, ranging from marine biology to the development of "Bayesian" spam blockers for email systems. In the philosophy of science, it has been used to try to clarify the relationship between theory and evidence. Many insights in the philosophy of science involving confirmation, falsification, the relation between science and pseudosience, and other topics can be made more precise, and sometimes extended or corrected, by using Bayes' Theorem. Stackelberg formulation of the network selection problem, where the operator optimizes its global utility by sending appropriate information, while mobile users compete to maximize their throughput by picking the best locally serving RAN. By Stackelberg we mean distributed decision making assisted by the network, where the wireless users aim at maximizing their own utility, guided by aggregated information broadcasted by the network about the channel distribution information (CDI) of each user. We derive the policy that corresponds to the Stackelberg equilibrium and compare it to the fully centralized (optimal), the

full channel state information (CSI) and the non-cooperative (autonomous) models. The Stackelberg leadership model is a strategic game in economics in which the leader firm moves first and then the follower firms move sequentially. It is named after the German economist Heinrich Freiherr von Stackelberg who published Market Structure and Equilibrium (Marktform und Gleichgewicht) in 1934 which described the model. In game theory terms, the players of this game are a leader and a follower and they compete on quantity. The Stackelberg leader is sometimes referred to as the Market Leader. There are some further constraints upon the sustaining of a Stackelberg equilibrium. The leader must know ex ante that the follower observes its action. The follower must have no means of committing to a future non-Stackelberg follower action and the leader must know this. Indeed, if the 'follower' could commit to a Stackelberg leader action and the 'leader' knew this, the leader's best response would be to play a Stackelberg follower action. Firms may engage in Stackelberg competition if one has some sort of advantage enabling it to move first. More generally, the leader must have commitment power. Moving observably first is the most obvious means of commitment: once the leader has made its move, it cannot undo it - it is committed to that action. Moving first may be possible if the leader was the incumbent monopoly of the industry and the follower is a new entrant. Holding excess capacity is another means of commitment.

IV CONCLUSION

Our main aim is the association schemes actually implemented by network operators are fully centralized. Distributed joint radio resource management (JRRM) mechanisms. This is gaining in importance mobile users may be allowed to make autonomous decisions in a distributed way. In the same trend, proposed a distributed algorithm which jointly determine the amount of radio resources that MCs should offer to SCs. The association rules that decide which mobile users should associate with SCs. Alternately, some regulators have proposed delegating users more involvement on the selection decision. But with retaining to the traditional network-centric selection approach.

REFERENCES

[1] "Technical specification group radio access network; scenarios and requirements for small cell enhancements for e-utra and e-utran (release 12)," vol. 3GPP TR 36.932 V12.0.0, 2012.[Online].available:http://www.3gpp.org/ftp/Specs/archive/36_series/36.932/36932-c00.zip

[2] J. G. Andrews, H. Claussen, M. Dohler, S. Rangan, and M. C. Reed,"Femtocells: Past, Present, and Future," IEEE Journal on Selected Areas in Communications, vol. 30, no. 3, pp. 497-508, Apr. 2012.

[3] A. Damnjanovic, J. Montojo, Y. Wei, T. Ji, T. Luo, M. Vajapeyam,T. Yoo, O. Song, and D. Malladi, "A survey on 3gpp heterogeneous networks," Wireless Communications, IEEE, vol. 18, no. 3, pp. 10-21, 2011.

[4] Ericsson, "LTE Release 12 - taking another step toward the Networked Society," White paper, Jan. 2013. [Online]. Available:http://goo.gl/BFMFR

[5] L. Wang and G.-S. Kuo, "Mathematical modeling for network selection in heterogeneous wireless networks: A tutorial," Communications Surveys Tutorials, IEEE, vol. 15, no. 1, pp. 271-292, 2013.

[6] S. Deb, P. Monogioudis, J. Miernik, and J. P. Seymour, "Algorithms for enhanced inter cell interference coordination (eicic) in lte hetnets," in IEEE/ACM Transactions on Networking, 2013.

[7] R. Mahindra, H. Viswanathan, K. Sundaresan, M. Y. Arslan, and S. Rangarajan, "A practical traffic management system for integrated lte-wifi networks," in ACM MobiCom, 2014.

[8] A. Ting, D. Chieng, K. H. Kwong, I. Andonovic, and K. Wong, "Dynamic backhaul sensitive network selection scheme in lte-wifi wireless hetnet," in IEEE PIMRC, Sept 2013.

[9] M. Haddad, S. E. Elayoubi, E. Altman, and Z. Altman, "A hybrid approach for radio resource management in heterogeneous cognitive networks," IEEE Journal on Selected Areas in Communications Special Issue on Advances in Cognitive Radio Networking and Communications, vol. 2, no. 6, pp. 733-741, April 2010.

[10] E. Aryafar, A. Keshavarz-Haddad, M. Wang, and M. Chiang, "Rat selection games in hetnets," in IEEE INFOCOM, 2013.