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A survey of component carrier selection algorithms for carrier aggregation in long term evolution-advanced (Conference Paper)

Ramli, H.A.M., Asnawi, A.L., Isa, F.N.M., Azman, A.W.

Department of Electrical and Computer Engineering, Faculty of Engineering, International Islamic University Malaysia (IIUM), Kuala Lumpur, Malaysia

Abstract

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Given that the demand for real-time multimedia contents that require significantly high data rate are getting of high popularity, a new mobile cellular technology known as Long term Evolution-Advanced (LTE-A) was standardized. The LTE-A is envisaged to support high peak data rate by aggregating more than one contiguous or non-contiguous Component Carriers (CCs) of the same or different frequency bandwidths. This paper provides a survey on the case where the LTE-A is working in backward compatible mode as well as when the system contains only LTE-A users. Note that the backward compatible mode indicates that the LTE-A contains a mixture of the legacy Long Term Evolution Release 8 (LTE) users that support packets (re)transmission on a single CC and the LTE-A users that are capable of utilizes more than one CCs for packets (re)transmission. It can be concluded from the study that the CC selection algorithms for newly-arrived LTE users can benefit from the channel diversity and the load status whereas the carrier aggregation that does not allocate all of the available CCs to the newly arrived LTE-A users shown to be more efficient.

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Publisher: Institute of Electrical and Electronics Engineers Inc.

References (31)

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1 Cheng, Y.-H., Su, W.-C., Feng, K.-T., Wang, L.-C.

QoS-guaranteed channel-aware scheduling and resource grouping under non-full buffer traffic for LTE-A networks

(2017) *IEEE Wireless Communications and Networking Conference, WCNC*, art. no. 7925772. Cited 2 times.
ISBN: 978-150904183-1
doi: 10.1109/WCNC.2017.7925772

View at Publisher

2 (2003) *Framework and Overall Objectives of the Future Development of IMT-2000 and Systems beyond IMT-2000*. Cited 143 times.
ITU-R

3 (2008) *Background on IMT-Advanced*. Cited 11 times.
ITU-R

4 Qinlong, W., Qixun, Z., Sun, Y., Wei, Z., Feng, Z.

A QoS-guaranteed radio resource scheduling in multi-user multi-service LTE-A systems with carrier aggregation

(2016) *2016 2nd IEEE International Conference on Computer and Communications, ICCC 2016 - Proceedings*, art. no. 7925233, pp. 2927-2932. Cited 3 times.
ISBN: 978-146739026-2
doi: 10.1109/CompComm.2016.7925233

View at Publisher

5 Lv, T., Liu, C., Gao, H.
Novel user scheduling algorithms for carrier aggregation system in heterogeneous network

(2017) *IEEE Wireless Communications and Networking Conference, WCNC*, art. no. 7925894.
ISBN: 978-150904183-1
doi: 10.1109/WCNC.2017.7925894

View at Publisher

6 Lee, H., Vahid, S., Moessner, K.
A survey of radio resource management for spectrum aggregation in LTE-advanced

(2014) *IEEE Communications Surveys and Tutorials*, 16 (2), art. no. 6657499, pp. 745-760. Cited 98 times.
http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=9739
doi: 10.1109/SURV.2013.101813.00275

View at Publisher

7 Yonis, A.Z., Abdullah, M.F.L., Ghanim, M.F.
Design and implementation of intra band contiguous component carriers on LTEA
(2012) *International Journal of Computer Applications*, 41, pp. 25-30. Cited 8 times.

8 Wang, H., Rosa, C., Pedersen, K.
Performance analysis of downlink inter-band carrier aggregation in LTE-advanced

(2011) *IEEE Vehicular Technology Conference*, art. no. 6092836. Cited 44 times.
ISBN: 978-142448327-3
doi: 10.1109/VETECF.2011.6092836

View at Publisher

9 Ramli, H.A.M., Isa, F.N.M., Asnawi, A.L.
An improved component carrier selection algorithm for downlink long term evolution-advanced

(2015) *Proceedings - 5th International Conference on Computer and Communication Engineering: Emerging Technologies via Comp-Unication Convergence, ICCCE 2014*, art. no. 7031636, pp. 201-204. Cited 5 times.
ISBN: 978-147997635-5
doi: 10.1109/ICCCE.2014.65

View at Publisher

10 Wu, F., Mao, Y., Leng, S., Huang, X.
A Carrier Aggregation Based Resource Allocation Scheme for Pervasive Wireless Networks

(2011) *Proceedings - IEEE 9th International Conference on Dependable, Autonomic and Secure Computing, DASC 2011*, art. no. 6119083, pp. 196-201. Cited 29 times.
ISBN: 978-076954612-4
doi: 10.1109/DASC.2011.54

View at Publisher

11 Al-Katsha, M.Z., Ramli, H.A.M.
Development of a novel component carrier selection algorithm in long term evolution-advanced (LTE-a) with carrier aggregation
(2016) *IEEE Student Conference on Research and Development*, pp. 1-5. Cited 2 times.

12 Wang, Y., Pedersen, K.I., Sorensen, T.B., Mogensen, P.E.

Carrier load balancing and packet scheduling for multi-carrier systems

(2010) *IEEE Transactions on Wireless Communications*, 9 (5), art. no. 5463232, pp. 1780-1789. Cited 154 times.
doi: 10.1109/TWC.2010.05.091310

View at Publisher

13 Tian, H., Gao, S., Zhu, J., Chen, L.

Improved component carrier selection method for non-continuous carrier aggregation in LTE-advanced systems

(2011) *IEEE Vehicular Technology Conference*, art. no. 6092963. Cited 42 times.
ISBN: 978-142448327-3
doi: 10.1109/VETECF.2011.6092963

View at Publisher

14 Lei, L., Zheng, K.

Performance evaluation of carrier aggregation for elastic traffic in LTE-advanced systems

(2009) *IEICE Transactions on Communications*, E92-B (11), pp. 3516-3519. Cited 25 times.
http://www.jstage.jst.go.jp/article/transcom/E92.B/11/3516/_pdf
doi: 10.1587/transcom.E92.B.3516

View at Publisher

15 Zhang, L., Liu, F., Huang, L., Wang, W.

Traffic load balance methods in the LTE-advanced system with carrier aggregation

(2010) *2010 International Conference on Communications, Circuits and Systems, ICCCAS 2010 - Proceedings*, art. no. 5582048, pp. 63-67. Cited 32 times.
ISBN: 978-142448223-8
doi: 10.1109/ICCCAS.2010.5582048

View at Publisher

16 Zhang, L., Zheng, K., Wang, W., Huang, L.

Performance analysis on carrier scheduling schemes in the long-term evolution-advanced system with carrier aggregation

(2011) *IET Communications*, 5 (5), pp. 612-619. Cited 51 times.
doi: 10.1049/iet-com.2010.0300

View at Publisher

17 Elbamby, M.S., Elsayed, K.M.F.

A transportation problem based resource allocation scheme for an LTE-Advanced system with carrier aggregation

(2012) *IFIP Wireless Days*, art. no. 6402869. Cited 4 times.
ISBN: 978-146734402-9
doi: 10.1109/WD.2012.6402869

View at Publisher

18 Wang, Y., Pedersen, K.I., Mogensen, P.E., Sørensen, T.B.
Resource allocation considerations for multi-carrier LTE-advanced systems operating in backward compatible mode

(2009) *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, PIMRC*, art. no. 5450150. Cited 33 times.
ISBN: 978-142445123-4
doi: 10.1109/PIMRC.2009.5450150

View at Publisher

19 De Andrade, D.M., Klein, A., Holma, H., Viering, I., Liebl, G.
Performance evaluation on dual-cell HSDPA operation

(2009) *IEEE Vehicular Technology Conference*, art. no. 5378867. Cited 12 times.
ISBN: 978-142442515-0
doi: 10.1109/VETECF.2009.5378867

View at Publisher

20 Liu, L., Li, M., Zhou, J., She, X., Chen, L., Sagae, Y., Iwamura, M.
Component carrier management for carrier aggregation in LTE-advanced system

(2011) *IEEE Vehicular Technology Conference*, art. no. 5956228. Cited 29 times.
ISBN: 978-142448331-0
doi: 10.1109/VETECS.2011.5956228

View at Publisher

21 Wu, F., Mao, Y., Huang, X., Leng, S.
A joint resource allocation scheme for OFDMA-based wireless networks with carrier aggregation

(2012) *IEEE Wireless Communications and Networking Conference, WCNC*, art. no. 6213978, pp. 1299-1304. Cited 13 times.
ISBN: 978-146730437-5
doi: 10.1109/WCNC.2012.6213978

View at Publisher

22 Ramli, H.A.M., Ismail, A.F., Abdullah, K., Sandrasegaran, K.
Performance analysis of two component carrier selection algorithms in the downlink LTE-A

(2013) *2013 IEEE 11th Malaysia International Conference on Communications, MICC 2013*, art. no. 6805815, pp. 145-150. Cited 6 times.
doi: 10.1109/MICC.2013.6805815

View at Publisher

23 Zheng, K., Liu, F., Xiang, W., Xin, X.
Dynamic downlink aggregation carrier scheduling scheme for wireless networks

(2014) *IET Communications*, 8 (3), pp. 114-123. Cited 11 times.
doi: 10.1049/iet-com.2013.0271

View at Publisher

24 Zhang, L., Wang, Y.Y., Huang, L., Wang, H.L., Wang, W.B.
QoS performance analysis on carrier aggregation based LTE-A systems

(2009) *IET Conference Publications*, 2009 (562 CP), pp. 253-256. Cited 22 times.
ISBN: 978-184919138-8
doi: 10.1049/cp.2009.1938

View at Publisher

25 Zhao, J.-H., Li, H., Hua, Q.
A SPF-PF crossing Component Carrier joint scheduling algorithm

(2012) *International Conference on Advanced Communication Technology, ICACT*, art. no. 6174636, pp. 173-177. Cited 17 times.
ISBN: 978-895519163-9

26 Pande, M., Piro, G.
Optimal resource allocation scheme for LTE-A systems with carrier aggregation

(2014) *2014 IEEE International Conference on Advanced Networks and Telecommunication Systems, ANTS 2014*, art. no. 7057230. Cited 6 times.
ISBN: 978-147995868-9
doi: 10.1109/ANTS.2014.7057230

View at Publisher

27 Songtao, G., Hui, T., Jianchi, Z., Lan, C., Xiaoming, S.
A throughput-optimized component carrier selection algorithm for LTE-advanced systems
(2011) *IET International Conference on Communication Technology and Application (ICCTA 2011)*, pp. 218-222. Cited 2 times.

28 Li, C., Wang, B., Wang, W., Zhang, Y., Chang, X.
Component carrier selection for LTE-A systems in diverse coverage carrier aggregation scenario

(2012) *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, PIMRC*, art. no. 6362491, pp. 1004-1008. Cited 16 times.
ISBN: 978-146732569-1
doi: 10.1109/PIMRC.2012.6362491

View at Publisher

29 Shahid, A., Aslam, S., Kim, H.S., Lee, K.-G.
Component carrier selection method for LTE-Advanced using metaheuristic approach

(2013) *International Conference on ICT Convergence*, art. no. 6675420, pp. 561-564.
http://ieeexplore.ieee.org/xpl/conferences.jsp
ISBN: 978-147990698-7
doi: 10.1109/ICTC.2013.6675420

View at Publisher

30 Narma, H.S., Atiquzzaman, M.
Carrier components assignment method for LTE and LTE-A systems based on user profile and application
(2014) *Globecom 2014 Workshop-Broadband Wireless Access*

31 Cheng, X., Gupta, G., Mohapatra, P.

Joint carrier aggregation and packet scheduling in LTE-advanced networks

(2013) *2013 IEEE International Conference on Sensing, Communications and Networking, SECON 2013*, art. no. 6645018, pp. 469-477. Cited 17 times.
ISBN: 978-147990230-9
doi: 10.1109/SAHCN.2013.6645018

View at Publisher