

Abstract 27HFKQRORJ\ KDV TXLFNO\ SURJUHVVHG ZLWK WKH DLG RI WKH
FRQWLQXDWLRQ RI ORRUH\ V ODZ ZKLFK VWDWHV D GRXEOLQJ RI WUDQVLVWRU
GHQVLW\ HYHU\ WZR \HDUV +RZHYHU WKH FRPSOHPHQWLQJ SULQFLSOH RI
ORRUH\ V /DZ WKH 'HQQDUG 6FDOLQJ ZKLFK VWDWHV WKDW SRZHU
GHQVLW\ ZRXOG VWD\ FRQVWDQW DV WUDQVLVWRU VLJHV VKUXQN VWRSSHG
EHLQJ WUXH LQ :LWK WKH EUHDNLQJ GRZQ RI 'HQQDUG 6FDOLQJ
QHZ FKDOOHQJHV ZHUH LQWURGXFHG LQFOXGLQJ LQ SRZHU PDQDJHPHQW
DQG KHDW GLVVLSDWLRQ SDUWLFXODUO\ IRU VPDOOHU GHYLFHV OLNH
HPEGGHG V\WHPV 7KLV XVKHUHG LQ D VHDUFK IRU LQRYDWLYH
VROXWLRQV HYHQWXDOO\ OHDGLQJ WR KHWHURJHQHRXV GHVLJQ ZKHUH
YDULRXV SURFHVVQJ XQLWV OLNH &38V *38V DQG)3*\$V DUH
LQWHJUDWHG LQWR D VLQJOH GHYLFH :LWK WKH LQWURGXFWRQ DQG
DGYDQFHQW RI KHWHURJHQHRXV V\WHPV QHZ FDSDELWLHV DUH
EHRPLQJ SRVVLEOH ZLWKLQ VPDOO EXW IDVW DQG HQUJ\ HIIFLHQW
GHYLFHV +RZHYHU ZLWK WKH KLJK FRPSOH[LW\ RI WKH V\WHPV DQG ZLWK
WKH SRZHU DQG KHDW GLVVLSDWLQJ FRQVWUDLQWV PXOWLSOH FKDOOHQJHV DUH
LQYROYHG ,W LV YLWDO WR KHOS DGYDQFH KHWHURJHQHRXV HPEGGHG
V\WHPV VLQFH LW LV VXFK YHUVDWLOH WHFKQRORJ\ DGYDQFLQJ
KHWHURJHQHRXV V\WHPV FDQ KHOS SURSHO YDULRXV VHFWRUV

Keywords component, heterogeneity, embedded systems, inernet
of things (IoT); power constraints, heat dissipation

x
x



