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x 4XHVWLRQV PXVW EH VXEPLWWHG YLD H PDLO WR WKH FRQWD
,Q WKH H PDLO VXEMHFW OLQH Questions 19RFQ082-Testing and Balancing On Call Services

x 4 $ DQG $GGHQGD ZLOO EH SRZZWDXVWLQLVG RUJ RUEVFSWHLGV

x 3URSRVDOV DUH GXH QR ODWHU WKDQ<RXUSURSRVDOV PXVW
GHOLYHUHG E\ PDLO RU KDQG GHOLYHU\ 3Wb P€V¼ÓDo2HQG HQYHDU

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$,6'VSHFLILHDTXWKHWVSRQLGLQHVWDFFQWDQGXHVWLRJDVWGLQJ
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$QVFKDQJHWK5L)4ZLEHSURYLGHGRURPDZULWWGGHQWRK5L)4 6XFK
DGGHQZLEHGLVVHPLWSRWHGQWLSRQEHSXEWOLRQ6'¶ZHEVLWH
IROORZW WSV ZZZ DXVWLDQLVG RUJ FS ELGV
$,6'¶RQOLQHQUDWZZZ SODQURRP PLOOHULGV FRP

,WWKHEOLJRWDRQHVSRQLGLQRDNHXUHULRXEPLWWHQSRQKHW
KDVHFHLYHGGHQGDRQQHZWWRK5L)4 &RSLHVGGHQGDXWRK5L)4
FDHREWDLQRWK&RQW3DFWVRQ

2QOWKRVHHVSRQWRHTXLZKLHWKHDGEH\IRUPZDWWHQGHQGKDOEHQGLQJ
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2Q &DOO 7HVWDLQDJQ FLQGJ 6HUYLFHV
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/LVUWHPDLZQRQNORRGELQHG

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$FFHOHUDWHGXOH

([SODLQHWKRQGDQDJHPHQFKQLTXHWRFFRPSDQDJJUHVVLYH
VFKHGRGHVLJQGRQVWUXFWRYRQHPSRHVXFFHVSURXMHFWFRPZSDUKDEOH
VWULQJHQWXOHV

(QHUJ\ 8&RQVLHUYDQGXRQWDLQDELOLW\

3URYDGXHPPDRU\RXHUQHUDJQXGWLFRQW\HUYDQWXLRQDLQUHOLDWHGJQ
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6WDWXWRU\ DXWKRULWLHV DQG UHJXODWLRQV

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6WDWHPHQW7HH[DVH JLVOLDWXUH 6HFWLRQ 1RWLILFDWLRQ+QLDWLQJ6XUEVHFWLRQ D VWDWHPHQWVSHFUVRREXVLQHVVQWWLKDEQWWHQDWRQUDZEWK D VGFLKVRVRUOLFLWYDRGXVDQFH QRWWLRKHLVWLWKSHUVRRQRZQHRUSHUDWRWRKEXVLQHVVWKLDWE\HHFQRQYLRWDHG IHORQ\K HQRWPLXFHQWLQ FODXJHQHGHDFUSWKEHRQGXFWWLKEHRQYLRWDLRQ IHORQ\´

6XEVHFWLRQ3HUVRQ3VDHFKRGLVWPDLWFHUPLDQFDRQWRWDSHUVRRBXVLQHVWLWK HGLVGUHLWFHWUPLKQDHKSHHUVRRBXVLQHVWDWQHJGYQHR WDLWHH TXLEHGXE VHFWDRRQ PLVUHSUHVHQWDWLRQ3HUVRQ3VDHFKRGLVWPDLWFHUPLDQFDRQWRWDSHUVRRBXVLQHVWLWK EXVLQHVWRWHUYLSFHUVRUEHHEWKHUWHUPLQDWLRQ WKRQ WUDFW´

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, WKXHQGHUVDJQHQRWWKHUPDPHEGHOFZHUWLKDWLQ IRUPDWRQRQUQRWLILHDWLRQ IHORFQR\QYLFKDLRHQHUQH YLHZ\HPHGQWKHRROORZQRQJPDWXUQGL VKWHUGXHRWKEHVRV P\NQRZOHGJH

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& 0\ILUP LV RZQRHSGHEDWWKGH IROORGZXLDQQZKLRQDGVLYKLEMHFQRQYLRWDHG IHORQ\DÑ`D PHA`•QHFHVV1!Ð`ÀÀ

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% 7$% &RQIHUHQFH 0HHWLQJ ZLWK 6XSHUYLVRU WR JLYH DQG %SUHG XU
GHYHORPHQW DQG XQGHUWDNH TXDUWHUO\ 5HTXLUH WKH SDUWLF
VXSHUYLVRU RU FKDQLGDQG \RXU RZQ WHVWLQJ W
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$JHQGD ,WHPV

D 7KH &RQWUDFW 'RFXPHQWV H[DPLQDWLRQ UHSRUW
E 7KH 7$% SODQ
F &RRUGLQDWLRQ DQG GLVFXVVLRQ RI FRQWUDFWRUV
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& &HUW\$%\ ILHOG WDWDQG HSSHRUU RUP WKH IROORZLQJ

5HYLHZ ILHOG GDWD UHSRUWV DQG OLVW RI SURFHGXUHV
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' 7$% 5HSRUW )RUPV 8VH VWDQGDUG F$%FRQWUDFWRU V IR

( ,QVWUXPHQWDWLRQ F7XSHF\4XDQWL&DWLHUULDEOHQ LQ$6+5$(
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## 352-(&7 &21',7,216

$ 3DUWLDO 2ZQHUZQHFXSRHDXSOHWHGXDQGHUVWDQGLQJ EHIHRUH 6XEV
&RPSOHWLRQ &RRSGHUDWLQJ ZLWKR2ZHQHUWLFRQVLWLFWVLQZLWK 2
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$ 1RWLFH 3URYLGH GD\V DGYDQFHHGXOHG IRU WHVWLQJ **WHV**

% 3HUIR7$%DIWHU OHDNDJH DQG SUHVVXUH WHVWV RQHQDLU DQ
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$ ([DPLQH WKH &RQWUDFWIDRPEXOHDQW3URMRXHUWFRPRQLWVFRQGU FRQGLWLRQV LQ V\VWSHUFOGHVLSQVRSWHUDW$%DRI V\WHPV DQ

% ([DPLQH V\VWHPV IRU LQVWDOOHG EDODQFLQJ GHYLFHV V ZHOO IORZ FRQWURO GHYLFHV FEDQXDQFLYRJOXDHYGDVPSHQGV WKDW ORFDWLRQ RI WKHVH EDODQFLQJ GHYLFHV DUH DFFH

& ([DPLQH WKH DSSURUHG$&XEVWHPDOVQG HTXLSHQW

' ([DPLQH GHVLJQ GDWD LQFHOXGLQJ&/ VVWDWHPHQWV RI G HQYLURQPHQWDO FRQGLWLRQV DQG DVV DERXW +9$&QGV WTXLSPHQW FRQWUROV

( ([DPLQH FHLOLQJ SOHQXP SDFHQGXPSDUHUHFRUXDLU WR YH WKDWPHWKW\WKH OHDNDJH FODVV RGI LFRQLQYHFWLRQ GX6FHWFWDRV 'XFWV DQG DUH SURSHGLVDFHQSVDUDWHQHWRUEDLWLZQVQOLQ SOH DUH VHDOHG DIQIGUHLTXHLVWRSSHG

) ([DPLQH HTXLSHQWSHLQFRUPDQFH DQG SXPS FXUYH

5HODWH SHUFRUPHDFWFRQGLWRQVHQWHUHGQXGLVQHPHFWV WKDW FDQ FUHDWHUXHQSHUXHQGHLGHGRQGHLGXFRQGVDWDLWDV SDUW RI D V\VWHP &DOFXODWH V\VWHP HIIHFW IDEWRQJVWHRTXLSSRXHQWSZHKUHQ LQVWDOOHG XQGHU FRQGKLWLRQQVGLGLIHQWVHQXWHGUWR SHUIRUP7DQFHOFXODWHWHFWV\WRE DLWDEVHWHDQGXFVKDUWV $0&$ )DQV DQG 6\VWHPV RU LQ 60$&1H$VVLJQ9$& 6\ &RPSDUH UHVXOWGVDZLDWEQGKHQGVHWDLQQHG FRQGLWLRQV

* ([DPLQH VD\QGWHHTXLSPHQW LQVWKDQDTDXELORQW\ DFRGWHEOI\WHVW DQG DGMXVWLQJ GXSDHGLHHWGLQQVHKBGYHL EHHQ SHUIRU

+ ([DPLQH WHVW UHSRUWV VSDHGILHTXLSPHQWGL6YLFGXDRQW\VWHP

, ([DPLQH +9$& HTXLSPHQWGDWKEUWLEHWDHUHDJHGDEHLQWHGDDEG WLJKW DQG HTXLSPHQW ZLWK IXQEWLRQLQJ FRQWURO LV

- ([DPLQH WHUPLQDO XQLWV VXFK WWUDKDLVEHKEHEHDEQGWRGXPH WKHLU FRQWURO DUH FRQQHFWHG DQG IXQFWLRQLQJ

. ([DPLQH VWUDLQHUW VWEDUWXS VFSUHHUDQDQHWUHFJHHFHGZEW SHUIRUDWLRQV

/ ([DPLQH WKYUDHOHYZD\IRU SURSHU LQGWGDOXQDFWLRQQIRU GLKYHLUW IOXLG IORZV

0 ([DPLQH KHDW WUDQVIHU FRLOV IRUU FRUHUHQFWQSGLSVWQUJDEROQ

1 ([DPLQH V\VWHP SXEPVHQWRR RHQHVQXWVDEQHRQDSULSLQJWKH

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3 5HSRUW GHILFLHQFLHV DGQGVFRXULQHJSHHSURRFHGXUHRI 2EVHU
UHFRGUHVDWWPRQV WR FKDQJHV LQWFRQHGLVGRQHWUHQWRHQWRUR
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$ 3UHSDUH D 7$% SODQ WKDW LQFORXGHGVXUWVDWHJLHV DQG V

% &RPSOHWH V\VWHPV UHDGLQHVV WHVWLQJ LQFOXGLQJ WHFKQLTXHV

3HUPDQHQW HOHFWULFDO SRZHU ZLULQJ LV FRPSOHWH
+\GURQLF V\VWHPV DUH ILOOHG FOHDQ DQG IUHH RI DL
$XWRPDWLF WHPSHUDWXUH FRQWURO YDOYHV DUH FDOLEUDWHG
(TXLSPHQW DQG GXFW DFFHVVRULHV DUH VHFXUHO\
%DODQFH VPRRWKHG DLUIORZ LQ
,VRODWLQJ DQG EUDQFK GXFWZRUN FRQQHFWLRQV DUH
&HLOLQJV DUH LQVWDOOHG ZLWKRXW VDJV
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$ 3HUIRUPHV WLQJ DQG EDODQFLQJ SURFHGXUHV WKDW FRQIRUP
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&RPSO\ZLWKLUHPHQWV LQ $6+5$( LU %D6HFQFLRQQJ

% &XW LQVXODWLRQ GXFWV SLSHVDQGQRQHRKLVHPVHQWSURFEHLQHW
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$IWHU WHVWLQJDQGFKESURDEOHFKQOHV PLQWHUVHQWVDQGZKWKDL
XVHG WR FRQVWUXFW GXFWV
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UHTXLUHPHQWV LWQL'RQLV$LRQXFWHSFFHVVRULHV
,QVWDOO DQG MRLQ QHZ LQVXODWLR5QVWKDW PLQWXFEH
FRYHULQJV YDSRUKEDFUURUHGLQDQWRVLJ9$& ,QVXODW

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$ 3UHSDUH WHVWRUDQG IRXWOHWWXU2HUWDLRXWDQHIDF
UHFRPPHQGHG WHVWLQJ SUVRFHGXUHRQLUHRVFKHFNWKHO
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% 3UHSDUH VFKHPDWLFHVDEXLOWRGVFW OD\RXWV

& )RU YDULDEOH DLU YROXPH V\VWHPUVLWHYHORS D SODQ WR

' 'HWHUPLQH WKH EHLQ DQG DUDQFKWGXFWVDLUORZFXUDVXUH

( &KHFN DLUIORZWKHWRXUQRIUDDPSHQWKHUVHQXVDQGDLU
GDPSHUV WKURXJK WKH VXSSO\ IDQ GLVFKDUJH DQG PL[LQJ

) /RFDWH VWDUW VWRS DQG GLVFRQQHFWPRZLRUFKWDUHWHUWU

* 9HULI\ WKDW PRWRU VWDUWHUV DUHCHSURSHFWZLRQK SURSH

+ &KHFN GDPSHUV IRU SURSHU SRVLWLRQ WR DFKLHYH GHVLU

, &KHFN IRU DLUIORZ EORFNDJHV

- &KHFN FRQGHQVDWH GUDLQV IRU SURSHU FRQQHFWLRQV DQ

. &KHFN IRU SURSHU VHDOLQJ RI DLU KDQGOLQJ XQLW FRPSR

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0HDVXUH VWDWLF SUHVVXUHV HQWHUHGLQJ [illegible]
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5HYLHZ 5HFRUG 'RFXPHQWV WR GHWHUPLQH [illegible]
VWDWLF SUHVVXUH [illegible]
DFFRPPRGDWH DFWXDO FRQGLWLRQV
2EWDLQ DSSURSULDWH [illegible]
$XWKRULW\@ IRU [illegible]
UHTXLUHPHQWV LQ 'LYLVLRQ 6HDWWOH RQ WHFKQLFDO [illegible]
DQG SXOOH\ WR DFKLHYH LQGLFDWHG [illegible]
'R QRW PDNH IDQ VSHHG DGMXVWPHQWV [illegible]
PDQXIDFWXUHUV DEEUHYLDWLRQV SHFLDOWLHV DQG SXEOLVKHG [illegible]
DPSHUDJH WR HQVXUH WKDW QR RYHUORDG [illegible]
KHDWLQJ HFRQRPL]HUV SHDN DQG VWDQGE\ PRGH WHPSHUDWXUH [illegible]
EUDNH KRUVHSRZHU

% $GMXVW YROXPH GDPSHUV IRU PDLQ GXFW VXEPDLQ GXFW
DLUIORZV ZLWKLQ VSHFLILHG WROHUDQFHV

0HDVXUH DLUIORZ RI VXEPDLQ DQG EUDQFK GXFWV

D :KHUH VXIILFLHQW VSDFH LQ VXEPDLQ [illegible]
WUDYHUVH PHDVXUHPHQWV [illegible]
WKH WRWDO DLUIORZ IRU WKDW ]RQH

0HDVXUH VWDWLF SUHVVXUHV [illegible]
YROXPH GDPSHUV XQWLO WKH SURSHU VWDWLF SUHVVXUH
5HPHDVXUH HDFK VXEPDLQ DQG EUDQFK GXFW DIWHU DO
VXEPDLQ DQG EUDQFK GXFWV WR LQGLFDWH [illegible]

& 0HDVXUH DLU RXWOHWV DQG LQOHWV ZLWKRXW PDNLQJ DGM

0HDVXUH WHUPLQDO [illegible]
LQVWUXFWLRQV DQG FDOFXODWLQJ IDFWRUV

' $GMXVW DLU RXWOHWV DQG LQOHWV [illegible]
LQGLFDWHG YDOXHV 0DNH DGMXVWPHQWV [illegible]
GÄ@PSHUV DW DLU WHUPLQDOV

$GMXVW HDFK RXWOHW [illegible]
TXDQWLWLHV ZLWKRXW JHQHUDWLQJ [illegible]
'RFXPHQWV
$GMXVW SDWWHUQV RI DGMXVWDEOH [illegible]

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$ &RPPHQVDWLQJ IRU 'LYHUVLW\ [illegible]
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JHQHUDO FRQVWUXFWLRQ SURFHGXUHV DQG PDWHULDOV DUH DEDXULQJ GHYLFHV

% 6WDWXV 5HSRUWV PRQWKO\ SURJUHVV VFKHGXOH SURFHGXUHV SURFHGV
SURJUHVV DQG VFKHGXOHG SHULRGLF VWDWXV EHIRUH QXQG LQ V\
EHLQJ WHVWHG DQG VEDODQFHG UHSRUWV FHUWLILFDWLRQ IC
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$ *HQHUDO 3HUIRUPDQFH UHSRUWV LQWHUDFWLYH EXLOGLQJ
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FHUWLILHG WHVWLQJ DQG EDODQFLQJ HQJLQHHU
,QFOXGH D OLVW RI SURFHGXUHV DOFDQJHU

% )LQDO 5HSRUW &RQWHQWV ,Q DGGLWLRQ WR FHUWLILHG IL

3XPS FXUYHV
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0DQXIDFWXUHUV WHVW GDWD
)LHOG WHVW UHSRUWV DQG EDODQFLQJ HQJLQHHU
2WKHU LQIRUPDWLRQ SUHOLPLQDU\ DQG RWKHU
SURGXFW GDWD

& *HQHUDO 5HSRUW RQ DWRQDWRQ ILQDO GDWD WKHV IROORZLQJ GD

7LWOH SDJH
1DPH DQG DGGUHVV RI WKH 7$% FRQWUDFWRU
3URMHFW QDPH
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$UFKLWHFW V QDPH DQG DGGUHVV
(QJLQHHU V QDPH DQG DGGUHVV
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5HSRUW GDWH
6LJQDWXUH RI 7$% VXSHUYLVRU ZKR FHUWLILHV WKH UH
7DEOH RI &RQWHQWV ZLWK WKH WRWDO QXPEHU RI SDJ
1XPEHU HDFK SDJH LQ WKH UHSRUW
6XPPDU\ RI FRQWHQWV LQFOXGLQJ WKH IROORZLQJ

D ,QGLFDWHG YHUVXV ILQDO SHUIRUPDQFH
E 1RWDEOH FKDUDFWHULVWLFV RI V\VWHPV
F 'HVFULSWLRQ RI WHVW PHWKRG LQVWUXPHQWDWLRQ

1RPHQFODWXUH VKHHWV TXLSPHQW LWHP
'DWD IRU WHUPLQDO XQLWV GLVSOD\HG LQ
1RWHV WR H[SODLQ ZKHWKHU UQDWLRQDO UHSRUWV

H )DQ GULYH VHWWLQJV LQFOXGLQJ FXUYHV SURILOHV WDUJHWV DQG PHDVXUHPHQW

I ,QOHW YDQH VHWWLQJV IRU YDULDEOH DLU YROXPH V

J 6HWWLQJV IRU VXSSO\ DLU VWDWLF SUHVVXUH FRQW

K 2WKHU RSHUDWLQJ FRQGLWLRQV WKDW DIIHFW SHUIR

' 6\VWHP DJUDPV ,QFOXGH VFKHPDWLF GLDJUDPV RI DLU IORZ LQ DQG RXW RI HDFK VXEV\VWHP LQFOXGLQJ HQFORVXUHV DQG FRPSRQHQWV WKH IROORZLQJ

4XDQWLWLHV RI RXWGRRU VXSSO\ UHWXUQ DQG H[KDX

:DWHU DQG VWHDP IORZ UDWHV

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&RLO 'DWD

D 6\VWHP LGHQWLILFDWLRQ
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F &RLO W\SH
G 1XPEHU RI URZV
H )LQ VSDFLQJ LQ ILQV SHU LQFK PP R F
I 0DNH DQG PRGHO QXPEHU
J )DFH DUHD LQ VT IW VT P
K 7XEH VL]H LQ 136 '1
L 7XEH DQG ILQ PDWHULDOV
M &LUFXLWLQJ DUUDQJHPHQW

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D $LU IORZ UDWH LQ FIP / V
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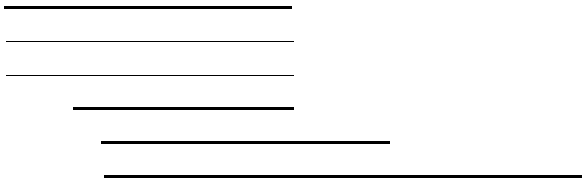

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