



Chapter 10

:eV^ 2_Rlj dZ_R_UCVgZh

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10.1 Overview

3WwV Raa|j Z_XZV^ cVch`_dV eYV cj 1:CE/ dIR|Z_Xe` eYVE:> DD#!! S
 RIYZgV^ V eURRe` UvZvdfUV e^ ReYV^ ReZTdR UdIZ/ TVRIYZgV^ V e
 dT` cVdWcR_Rlj dZ_R_UcVa` ceZ_XLeYVE:> DD` A:C=D:_eVc_ReZ_Rj Def Uj
 4V_eVcT`_UF TeURcVgZh` VRcR_XV` WURX` dZT dReZTd` Vi R^ Z_VR_U
 VgRjf ReVeYVaQ TY^ ^ VecZTYRcRiVcZbZd` WRIY RIYZgV^ V_eZV^ Z_eYV%*
 T f`_ecZdR_UWf c3V_TY^ Rc\Z_XaRceZTaR_edZ` E:> DD#!! SZEYZlcVgZh
 a|Rj VURTcf T|Rj c`|VZ` eYVbf R|Zj Rdf cR_TV` WeYVE:> DD#!! S URRLV_RS|Z_X
 eYVUeVTeZ`_`W_f df Rj ZV^ ac` aVceZdeYReT f|JUdX_Rj Rac` SJV^ `cVc` c
 Wc RaRceZf |Rc T f`_ej Z7` c Vi R^ a|VLR` ZV^ eYReh Rdf`_TYRcRiVcZbZdR|j
 VRj`_c UZVIF|eL`_c YRUR`_f_f df R|j j`h UZITcZ` Z_ReZ_Xa`h VdLT f|JU_Z_UZ
 TReV Ra` eV_eRj ac` SJV^ h ZY VdYVc eR_djReZ`_`cacZ_eZ_XZDZ` ZRcj LRT`_f
 dcf TeUicVch`_dV ZV^ h ZY f_f df R|j j`h dT` cZ_XcV|ZSZZj T f|JU_Z_UZReV
 Rac` SJV^ h ZY R dT` cZ_XcV|ZSZZj RaRceZf |Rc T f`_ej Z:_ eYVcRcVZ` dR_TVc
 h YVcVdf TY ZV^ dh VcVWF`_ULeYVT f`_ej`decR_djReZ`_gVcZ` TReZ`_U`TF f
 ^ V_edR_UacZ_eUS`_`|Vedh VcV Vi R^ Z_VUWc`~Rh d`c_Z`RTIF`cRIZ/dR_U
 ZV_VIVdRj LeYVZV^ h RdcV^`gVUW^ eYVZ_eVc_ReZ`_Rj URdSRd/Wc eYRe
 T f`_ej ZEYZlTYRaVc UVdTCZVdeYVSRdZT ZV^ dReZbZd eYReh VcVT`_df JeM
 R_U eYVcVgZh` TcZVcR eYReh VcV Raa|ZULR_Uac` gZVd Vi R^ a|VdW^ eYV
 RddVf` V_ee` Zjf dReVeYVcVgZh ac` TVdL

10.2 Statistics for Item Analysis

E` SVXZ` eYVcVgZh ac` TVdLeYV:_eVc_ReZ`_Rj Def Uj 4V_eVcT`^ af eM
 ZV^ R_Rlj dZ_R_UcVa` ceZ_XLeYVE:> DD` A:C=D:_eVc_ReZ`_Rj Def Uj
 dY` h_Z_XeYV ac` aVceZd` WeYV ZV^ Z` VRIY` WeYV%* T f`_ecZdR_UWf c
 3V_TY^ Rc\Z_XV_eZVdaRceZTaReZ`_XZ` E:> DD#!! SZ6i YZSd"!Z`R`U"!Z#
 dY` h Vi R^ a|Vd` WeYV dReZTd TRj|f |ReU Wc R^ f|JeZ|MTY` ZIVR`URT`_f

def TeUicVch`_dVZ^ LcVhVTeZVj ZDeReZTdWc VRIY Z^ h VcVUZa|Rj VU
 RJaYRSVeZTR|j Sj T f _ej Lh ZY eYVZ_eVc_ReZ_Rj RgVcRXVWc VRIY dReZbTZ_
 eYVS`ee`^ c`hZ7`c eY`dVT f`ecZdeYReeVdUz`^`cVeYR`_`VJR_XfRXM
 dReZbTdh VcVAcVd_eUdVaRReVj Sj JR_XfRX/Xc`faZ7`cRj|Z^ dLcVXRdU
 Jvd`W^ Wc^ RdeReZTdZ_Tjf UMeYV_f^ SVc`Wf UV_edeYReVch`_UMU
 Z_VRIY T f`ej LeYVUZMIF |j |VgV|_eYVaVcTV_eRX`Wf UV_edeYReR_ch VcU
 eYVZ^ T ccVTej /LR_UeYVUZMIF`Z_ReZ`_Z_UMi_1eYVa`Z_dSZMZR|T ccV|Ri
 eZ`SVh W_d`TIVd`_eYVZ^ R_URè eRj dI`cV` 2|d`ac`gZUMhRdR_
 VdZ`ReV`VeYVZ^`dUZMIF |j f dZ_XRCrdIY`_MaRd^ Vc:CE`^`UMZEYV
 Z_eVc ReZ`Ri^VR`d`VeYVZ^ UZMIF |eZdR UZ^ UZMIF`Z_ReZ` d dVcVU
 RdXfZUMde`eYV`gVcRj|dReZbTR|ac`aVceZd`VeYVZ^ d

DeReZbTdUZa|Rj VUWc`f`jeZaJMY`ZIVZ^ dZ`Tjf UMeYVaVcTV_eRX`
 `Wf UV_edeYReTY`dVRIY`aeZ`_LRdh Vj RdeYVaVcTV_eRX`Wf UV_edeYRe
 `^`ZeU`cUZ`_ecVRIY eYVZ^ LR_UeYVa`Z_dSZMZR|T ccV|RZ`SVh W_
 eYVcVch`_dVè VRIY`aeZ`_R_UeYVe`eRj dI`cVZDeReZTdUZa|Rj VUWc`T`f`
 def TeUicVch`_dVZ^ dIh YZiY T f |UYRgV`_V`c`h` dI`cV|VgV|d`Z`Tjf UMeYVUZMIF |j

U c U ° eZ W Y

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PCT_0, PCT_1, PCT_2, and PCT_3: F dMUWcT _ dcf TeMucVch` _ dV ZV^ d` _lj 1dWGi YZS!"! Z#/LVRIY T jf ^ _ Z UZIRVdeYVaVcIV_eRXV` Wdf i UV_ eddΓ cZ XReeYVaRceZf jRc dΓ cV|VgV|Lf a e` R_ UZ Tf UZ XeYV^ Ri Z f ^ dΓ cV|VgV| Wc eYVZV^ Z?` ecVRIYU ZV^ dh VcVVi Tf UMUW ^ eYVUV ` ^ Z R e` c Wc eYVdVTR|Tf jRz d

PCT_IN: F dMUWc ^ f j eZa|MTY` ZIVZV^ d` _lj LeYZIh RdeYVaVcIV_d RXV` Wdf UV_ edeYReac` gZMUR_ Z_gRjZU cVch` _ dV e` R ^ f j eZa|MTY` ZIVZV^ Z E j aZIR|j LZ_gRjZU cVch` _ dV dh VcV eYV cVd j e` Wdf UV_ edM|VTeZ_X^ ` cV eYR_ ` _VcVch` _ dV` aeZ_ Wc eYVdR^ VZV^ ;

PCT_OM: EYZIZIeYVaVcIV_eRXV` Wdf UV_ edh Y LYRgZ XcVRIYUeYV ZV^ LUZU_ ` eac` gZMURcVch` _ dVZ?` ecVRIYU ZV^ dh VcVVi Tf UMUW ^ eYV UV_ ` ^ Z R e` ch YV_ TR|Tf jRz XeYZIdReZbZ

Reliability - Cases: E` ac` gZVR ^ VRdf cV` WeyVcV|ZSZZj ` WeyV
dF cZ_X` WeyVT _daf TeUcVda` _dVZV^ dLeY` dVZV^ dZ Raac` iZ` Revj #8
aVcIV_e` WeyVcVcS` ` \JedZ` VRIY T f _ej h VcVdF cUSj` ch` Z UVaV_UV_e
dF cVccZEYZIT Jf ^ Z UZIRedeyV f ^ SVc` WZ VdVRIY ZV^ h RdU f SIM
dF cMUZ` RT f _ej;

Reliability - Score: EYZIT Jf ^ _ T _eRZ` deYVaVcIV_eRXV` Wwi RLe
WWWU V V VQ Sj` ch` Z UV†

è T ^ aRcVaVcWc^ R_ TVW ^ ` _VRU^ Z_ ZcReZ_ è eYV_ Vi eZ2eeYVdR^ V
 eZ_ VLeYVUZa|Rj TR_ SVfdUè UvVTeZV^ ISj IT f_ ej Z_ eVcRteZ_ dRtc` di
 R|| T f_ eZd

10.3 Scoring Reliability

2S` fe` VexZU` VexVZV^ dZ eYVE:> DD#! ! S RtdVd^ V eh VcVT` dcf TeU
 cVd^ _dVZV^ dLT ^ acZL_X_Vrcjj YRjWVexVdR` cVa` Z_ edWc eYVRtdVd^ V_ é⁸
 2_ VdM_eRj cVbf ZV^ V_eWcf dV` Wf TY ZV^ dZLeYReeYVj SVcV|ZSj dR` cU
 Sj Rj| aRceZaR_ edZEYReZLR aRceZf |Rc dcf UV_ ecVd^ _dVdY` f |UcVIVZgV eYV
 dR^ VdR` cLcVXRcUjVd` WexVdR` cVZ:_ T_ Uf TeZ_XE:> DD#! ! \$L^ VRd cVc
 eR\ V_ è V_ dV cV eYRe eYVT` _dcf TeU cVd^ _dV ZV^ dh VcVdR` cU cV|ZSj
 Z_ Rj| T f_ eZdZ_ Tjf UVU UVgVj` aZ_XdR` cZ_XXf ZMdWc VRIY T` _dcf TeU
 cVd^ _dVbf VdZ_ ih YZY ac` gZMU UVdRcZaeZ_ d` VRTIVaeRSjV cVd^ _dVdWc
 VRIY dR` cVa` Z_ egRjf V| R_ Uac` gZLZ_XVi eV_dgVecRZ_Z_XZ_ eYVRaa|ZReZ_`
 ` WexVdR` cZ_XXf ZMdZDT` cZ_Xac` TMf cVdWc` cXR_ ZK_ZR_U^ ` _Z_ cZ_XeYV
 dR` cZ_XdVdZ_ dh VcV` f eZ_VUZ_ eYV

Exhibit 10.4 Example Item-by-Country Interaction Display for Item M012040

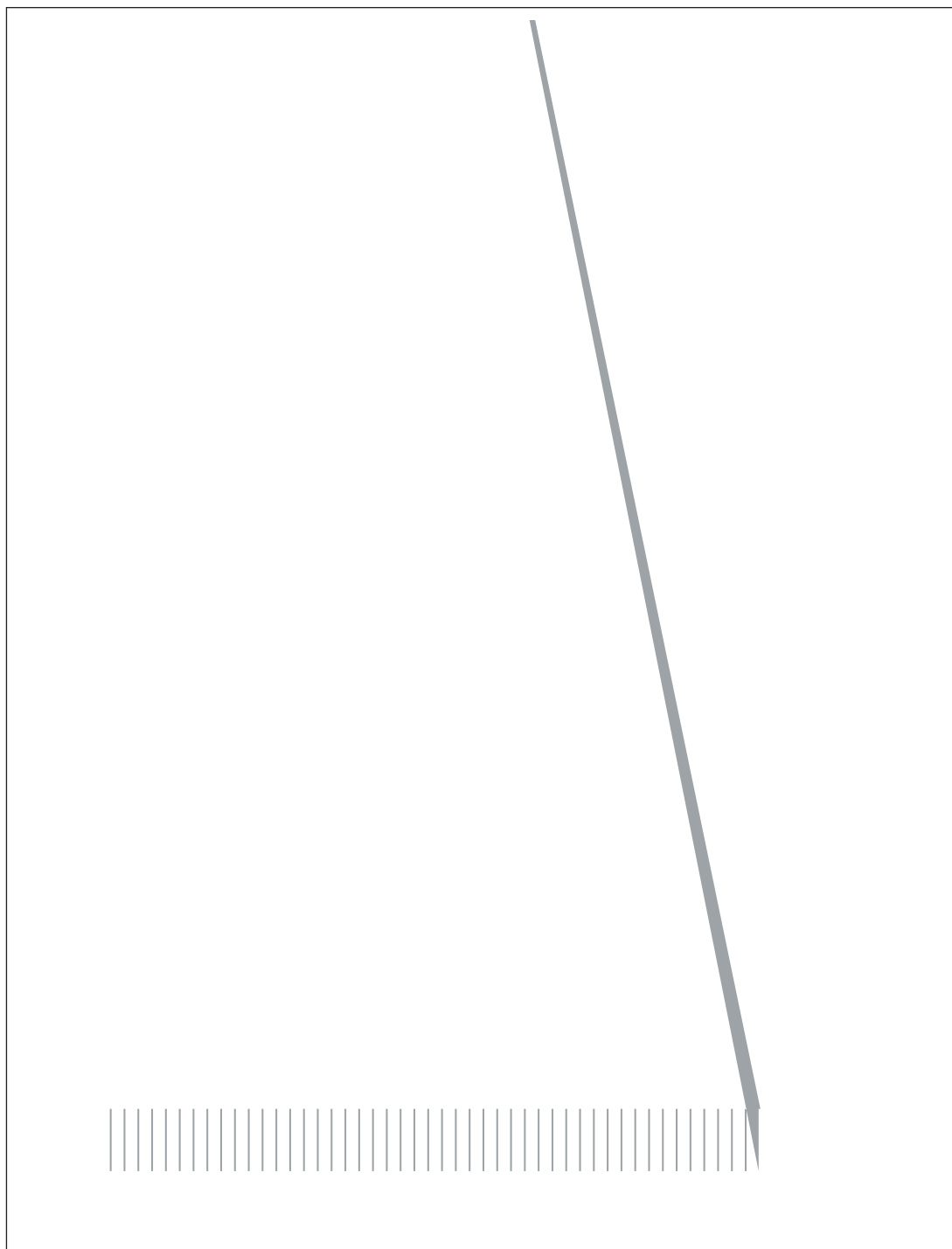
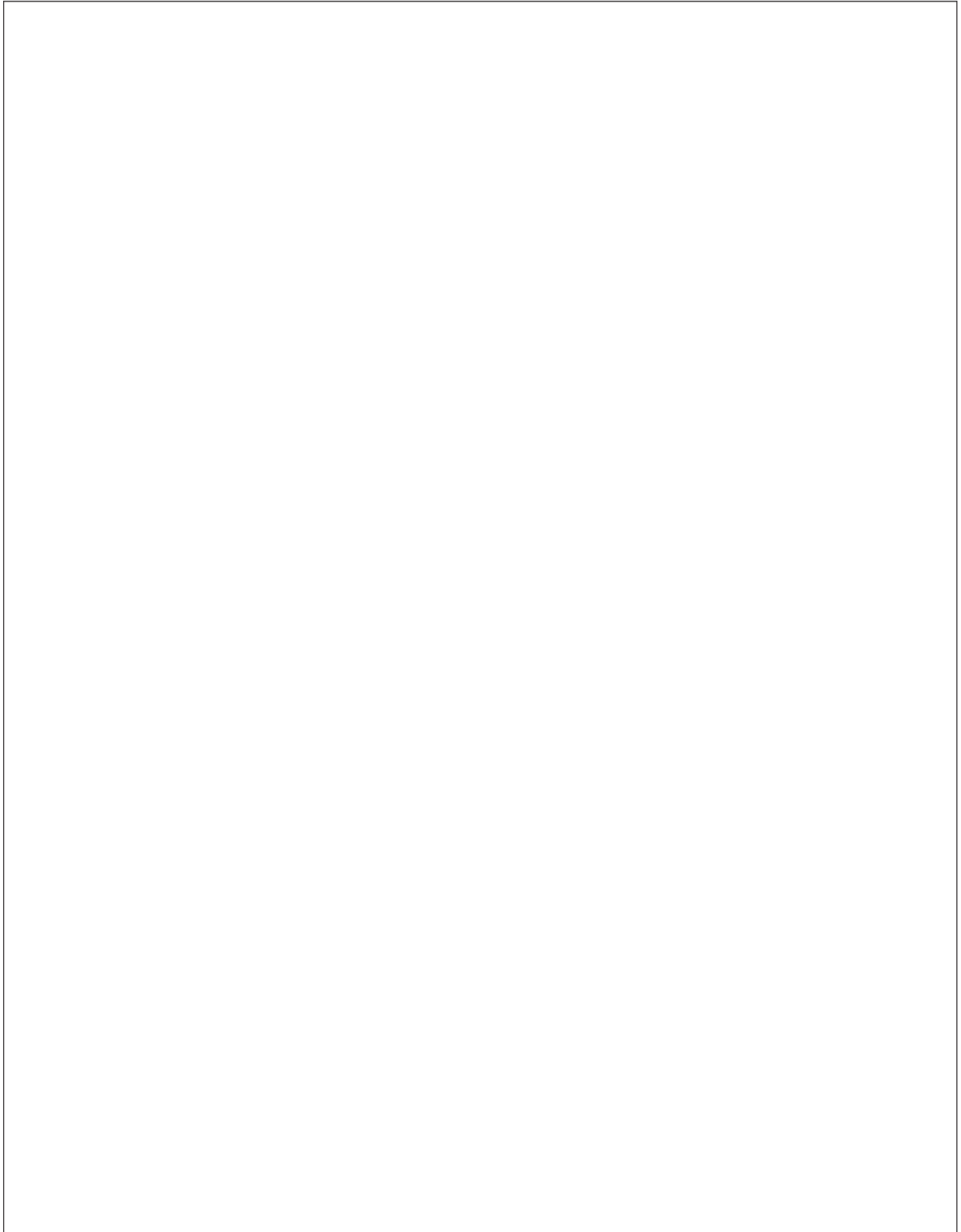


Exhibit 10.5 Example Item-by-Country Interaction Display for Trend Item M012001



10.4 Item Review Procedures

EYV:_eVc_ReZ_Rj Df Uj 4V_eVc eY`c`f XYj cVgZh WU eYVZ^ dReZTdWc
 Rj| aReZaReZ XT f_eZde`V_d cVeYReZ^ dh VcVaVcWc^ Z XT ^ aRePSj
 RTc`dT f_eZdZ:_ aReZf jRdZ^ dh ZY eYVWj`hZ Xac`SjV^ dh VcVT`f
 dUMcUWc a`dZjVUMjVZ`W^ eYVZ_eVc_ReZ_Rj URdSRdV

† 2_ Vcc`ch RdUVeVUUF cZ_XE:> DD#! ! S eR_dReZ`gVcZ`TReZ`Sf eh Rc
 `eT ccVTeUSWcV eVcRU^ Z ZcReZ`;

† 5ReRTYVT_Z XcVgVRjVUR^ f jZa|MTY`ZIVZ^ hZY^`cV`cWh Vc`aeZ_c

10.5 Item Position in Booklet

2dUVdIcZSWU_Z 4YRaêc #LE:> DDYRdRT ^ a|ZIRêUdf UV_eS` ` \JVeUVdX_Z
2|eY` f XY VRIY df UV_eT ^ a|Vêd|f de` _VS` ` \JVeLeYVcV RcV" # UZWWcV_e
df UV_eS` ` \JedRe VRIY XcRUV|VgV|Lh ZêY dZ S|` T\ d` W` ReYV^ ReZTdR_U
d|ZV_TVZê^ dZ_VRIY S` ` \JêZ2dZ|f deReU_Z 6i YZSê"! Z #LS|` T\ d` Wê^ c
RaaVRc_Z UZWWcV_ea` dêZ_dZ UZWWcV_eS` ` \JedZ7` c Vi R^ a|VLeYVZê^ c
Z_S|` T\ > " RaaVRc RdêYV} cêS|` T\ Z_ 3` ` \Jê" LRdêYV dMT _US|` T\ Z_
3` ` \Jê' LR_URdêYVêYZUS|` T\ Z_ 3` ` \Jê" #ZEYZIR|]` h dêYVS` ` \Jedê
SV|Z \VUè XVeYVc WWTZ_ej LSf eR|d è ^ ` _Zê cR_UT f_eVcSR|R_TV R_j
a` dêZ_ WWTêZ

2_ Z` a` cêR_edêVa_Z êYVZê^ cVgZ h ac` TvdL^ RUVa` dZS|V Sj êYV
T f_eVcSR|R_TVUS` ` \JêUVdX_Lh Rdè T ^ aRcVêYV TYRcR|êVcZêZTd` Wê^
S|` T\ dRaaVRc_Z XZ UZWWcV_eS` ` \Jêa` dêZ_dê UVêTeR_j a` dêZ_ WWTêZ2c

References

E: > DD1#! ! #/1 TIMSS 2003 Survey Operations Manual LacVaRcVUSj eYV:_eVd
_ReZ_Rj Df Uj 4V_eVd4YVde_f e9ZjE> 2+3`de`_ 4`jVXV.

