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ITU - Telecommunicatic Standardization Sector
Study Group 8 Questio 0 Rapporteur Group
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TITLE: Reply liaison statement from Q2/15 (Yokosuka, 24-27 October 1995), Annex to AVC-854R, on

Need H.245 to support addressing and association of media streams carried over s arate network connections

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LIAISON STATEMENT

TO: ITU-T 15 - Q2/15

APPROVAL: Agree at the Rapporteur group meeting

FOR: Action

DEADLINE: Deadl for reply - 7 June 1996

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1. Thank you for the lia on reply to AVC-828. Your Figure 2 identifies the situation we wish to support, with multiple s ions between the same two stations (including MCUs or gateways), each session containinc ultiple network connections. A method is needed to associate or correlate the network c ections that belong to each session. Our special concern is for T.120 transport connections th may be carried separate from the audio, video, and control streams. However, we believe th is a common problem to be solved, independent of media.

We would like to add or more characteristic, which we did not make clear in our original liaison. That is the need to supp t several different networks. B-ISDN (H.310) and LAN (H.323) are the most immediate. But o can also envision eventually GSTN (by multilink extension of H.324). Certain combinations m also be useful, where stations are using two networks simultaneously. For example, audio anc deo via B-ISDN H.310 together with T.120 data via ATM Forum LAN emulation. Or audio an ideo via GSTN H.324 together with T.120 data via legacy LAN.

We appreciate your sol on using correlation ID and recognize its value in a situation where both stations are strictly -ISDN H.310. However, we seek a more general solution that will cover other networks ar network combinations. We wish *not to interfere* with your design for using correlation ID. W etract any implication that the called party must be able to assign it.

2. After more study of t problem and some discussion with H.323 experts, it seems that the better part of a general lution is simply the addition of network addressing to H.245 during the request-response proce ing of OpenLogicalChannel-OpenLogicalChannelAck. This handles cases where the H.245 ntrol stream is established before other media are initiated.

Additional network addr sing is a prerequisite for creating combinations like B-ISDN plus LAN emulation or GSTN plu egacy LAN. Without it, all new media are constrained to traverse the

same network in paralle) the H.245 control stream. With new addressing, on the other hand, the choice of a new net rk also becomes possible: this may be implied by the structure of the address or by another fi l explicitly encoding the transfer mode.

The usefulness of netw addressing (to its fullest extent) is that part of what can be conveyed is ignored during conne on routing and is purely a matter of local identification controlled by the destination station. Q.2 1 subaddresses, NSAP selectors, and TSAP identifiers (port numbers) are examples of local ic tification.

In conjunction with H.24 signaling that a new logical channel is to be opened, a station can preassign a unique iden er for the new logical channel and record the association/correlation of this new identifier with t session to which the H.245 control stream belongs. If this identifier is passed to the other stat , as part of an address, and the other station then establishes a new network connection tow l it, the incoming connection to the original station will arrive bearing an address indication th identifies which logical channel it represents and thence the session to which it belongs. The n connection need not be on the same network as the H.245 control stream. It need only pr de a called address indication and some flexibility in address structure to allow locally manage nique identifiers.

3. The addressing of lo al channels should be optional in H.245. It should be part of both the request OpenLogicalCh nel and the response OpenLogicalChannelAck, since one party may have a stronger pretere e than the other for the network routing.

An ordinary station may e in session with a multipoint controller (MC). The station may request a data channel with no p ticulars, and the MC may reply with an address in the Ack that routes the data channel over a ew connection to a designated multipoint processor (MP) that resides somewhere else. Also, an MC chooses to employ native multicasting over a LAN (currently more feasible for audio d video than for data), the MC will be the one to assign multicast LAN addresses. This is anot r reason why it might need to use the addressing field of an Ack.

4. Attached is a draft o ow H.245 might be extended for logical channel addressing. We hope you will examine wheth it has any merit.

5. The proposed draft f uses on the immediate need for separate T.120 transport connections in the context of H.310 d H.323. Hence, it defines a NetworkAddress type with limited scope. As you work out the ren ning details of H.323, we think you may consider the possible utility of expanding NetworkAddi s to include GSTN and ISDN too. Work in this direction has already been approved as part T.124 (1995) Generic Conference Control. We direct your attention to section 7.1.2.5, descript n of Network Address parameter, and section 8.7 ASN.1, definition of the NetworkAddress typ

```
DataProtocolCapabi  /                ::=CHOICE
{
    nonStandard                      NonStandardParameter,
    v14buffered                      NULL,
    v42lapm                          NULL,          -- may negotiate to V.42bis
    hdlcFrameTunneling               NULL,
    h310SeparateVCBack               NULL,
    h310SingleVCStack                NULL,
    transparent                      NULL,
    ...,
    separateLANStack                 NULL
}

-- ==============  ========================================================
-- Logical channel signalling definitions
-- ==============  ========================================================
```

```
OpenLogicalChanne                    ::=SEQUENCE
{
    forwardLogicalC  nnelNumber      LogicalChannelNumber,

    forwardLogicalC  nnelParameters  SEQUENCE
    {
        portNumber                   INTEGER (0..65535) OPTIONAL,
        dataType                     DataType,
        multiplexPa  neters          CHOICE
        {
            h222Log  alChannelParameters H222LogicalChannelParameters,
            h223Log  alChannelParameters H223LogicalChannelParameters,
            vgmuxLc  alChannelParameters VGMUXLogicalChannelParameters,
            ...
        },
        ...
    },

    -- Used to speci  he reverse channel for bi-directional open request

    reverseLogicalC  nnelParameters  SEQUENCE
    {
        dataType                     DataType,
        multiplexPa  neters          CHOICE
        {
            -- H.222  rameters are never present in reverse direction
            h223Logi  ChannelParameters   H223LogicalChannelParameters,
            vgmuxLc  alChannelParameters  VGMUXLogicalChannelParameters,
            ...
        } OPTIONAL                   -- Not present for H.222
        ...
    } OPTIONAL,                      -- Not present for uni-directional channel request
    ...,
    separateStack                    NetworkAccessParameters OPTIONAL
                                     -- for Open responder to establish the stack
}

OpenLogicalChanne  ck                ::=SEQUENCE
{
    forwardLogicalC  nnelNumber      LogicalChannelNumber,

    reverseLogicalC  nnelParameters  SEQUENCE
    {
        reverseLogi  lChannelNumber  LogicalChannelNumber,
        portNumbe                    INTEGER (0..65535) OPTIONAL,
        multiplexPa  neters          CHOICE
        {
            h222Lo  alChannelParameters H222LogicalChannelParameters,
            -- H.223  rameters are never present in reverse direction
            ...
        } OPTIONAL                   -- Not present for H.223
        ...
    } OPTIONAL,                      -- Not present for uni-directional channel request
    ...,
    separateStack                    NetworkAccessParameters OPTIONAL
                                     -- for Open requester to establish the stack
}
```

```
OpenLogicalChanne  :ject                    ::=SEQUENCE
{
    forwardLogicalC  nnelNumber             LogicalChannelNumber,
    cause                                   CHOICE
    {
        unspecified                         NULL,
        unsuitableR  erseParameters         NULL,
        dataTypeNo  pported                 NULL,
        dataTypeNo  ailable                 NULL,
        unknownDa  ype                      NULL,
        dataTypeALC  binationNotSupported   NULL,
        ...,
        separateSta  EstablishmentFailed    NULL
    },
    ...
}

NetworkAccessPara  ters                     ::=SEQUENCE
{
    distribution                            CHOICE
    {
        unicast                             NULL,
        multicast                           NULL,          -- In T.120, for further study
        ...
    },
    networkAddress                          CHOICE
    {
        q2931Addre                          Q2931Address,
        localAreaAc  ess                    LocalAreaAddress,
        ...
    },
    ...
}

Q2931Address                                ::=SEQUENCE
{
    address CHOICE
    {
        internationa  umber                 NumericString (SIZE(1..16)),
        nsapAddres                          OCTET STRING (SIZE(1..20)),
        ...
    },
    subaddress                              OCTET STRING (SIZE(1..20)) OPTIONAL,
    ...
}

-- The definition of L  alAreaAddress should be taken from H.225.0
-- The relevant choic  contain fields for TSAP identifier (port number)
```

Notes --

a) The intent of a se : rate network connection for data is indicated by **dataType** in **OpenLogicalChanne** esolving to values **h310SeparateVCStack** or **separateLANStack** of **DataProtocolCapabi** . When the selected **DataApplicationCapability** is **t120**, these choices imply use : the T.123 basic profile for B-ISDN and LAN, respectively. Alternative LAN p iles may be selected by a **nonStandard DataProtocolCapability**.

b) If **separateStack** is p sent in the **OpenLogicalChannel** request, the receiver should attempt to establi the stack indicated. It will respond **OpenLogicalChannelAck** if successful, otherv e **OpenLogicalChannelReject** with a suitable **cause**.

c) If **separateStack** is a sent in the **OpenLogicalChannel** request, the receiver should supply an appropi te **separateStack** in its **OpenLogicalChannelAck** response. The receiver of this (th original requester) should then attempt to establish the stack indicated. It will is ie **CloseLogicalChannel** if unsuccessful.

d) If **separateStack** is p sent in the **OpenLogicalChannel** request, it can be overridden by **separateStack** in th **OpenLogicalChannelAck** response. If the original requester does not tolerate an ov ide, it will issue **CloseLogicalChannel**.

e) If **separateStack** is a sent in the **OpenLogicalChannel** request and also absent in the **OpenLogicalChanne** ck response, the original requester can infer that the responder does not understa these ASN.1 extensions and should issue **CloseLogicalChannel** to clean up.