



# COVERING NOTE

GENERAL SECRETARIAT INTERNATIONAL TELECOMMUNICATION UNION

Geneva, 11 August 2005

ITU – TELECOMMUNICATION  
STANDARDIZATION SECTOR

**Subject: Erratum 1 (08/2005) to**

ITU-T Recommendation G.998.3 (01/2005), *Multi-pair bonding using time-division inverse multiplexing*

1) *Modify Table 5/G.998.3 as follows:*

**Table 5/G.998.3 – Pair state machine states definition**

State	Definition	Transition
Down	The pair is not transmitting nor receiving	<ul style="list-style-type: none"><li>• <a href="#">θ[P1]</a> to "Handshake" state</li></ul>
Handshake	The pair is using Handshake (ITU-T Rec. G.994.1) for discovery and to negotiate and set its operational parameters (e.g., rate, modulation, Power Spectral Density (PSD) mask, the bonding scheme (TDIM, Ethernet in the First Mile (EFM), etc.))	<ul style="list-style-type: none"><li>• <a href="#">θ[P2]</a> to "Down" state</li><li>• <a href="#">θ[P3]</a> to "Activation" state</li></ul>
Activation	The pair is activating with its operational parameters	<ul style="list-style-type: none"><li>• <a href="#">θ[P4]</a> to "Down" state</li><li>• <a href="#">θ[P5]</a> to "Synching to group" state</li></ul>
Synching to group	The pair is operating, the aggregation layer operates "Sync to group" procedure (12.3.3)	<ul style="list-style-type: none"><li>• <a href="#">θ[P6]</a> to "Down" state</li><li>• <a href="#">θ[P7]</a> to "Synching to group" state</li><li>• <a href="#">θ[P8]</a> to "Synched to group" state</li></ul>
Synched to group	The pair is synchronized to the aggregation group, waiting for a management decision to be added to the aggregation group	<ul style="list-style-type: none"><li>• <a href="#">θ[P6]</a> to "Down" state</li><li>• <a href="#">θ[P9]</a> to "Adding to group" state</li></ul>
Adding to group	The aggregation layer is attempting to add the pair to the aggregation group by using the "Sync change" procedure (12.3.2)	<ul style="list-style-type: none"><li>• <a href="#">θ[P10]</a> to "Lost sync to group" state</li><li>• <a href="#">θ[P11]</a> to "Part of group" state</li></ul>
Part of group	The aggregation layer delivers service data through the pair according to the dispatching table	<ul style="list-style-type: none"><li>• <a href="#">θ[P10]</a> to "Lost sync to group" state</li><li>• <a href="#">θ[P12]</a> to "Remove from group" state</li></ul>

**Table 5/G.998.3 – Pair state machine states definition**

State	Definition	Transition
Lost Sync to group	The aggregation layer is operating "Fast change" procedure, after which the pair is removed from the aggregation group (12.3.1)	<ul style="list-style-type: none"> <li>• <a href="#">θ[P6]</a> to "Down" state</li> <li>• <a href="#">θ[P13]</a> to "Synching to group" state</li> </ul>
Remove from group	The aggregation layer is operating "Sync change" procedure, after which the pair is removed from the aggregation group (12.3.2)	<ul style="list-style-type: none"> <li>• <a href="#">θ[P6]</a> to "Down" state</li> <li>• <a href="#">θ[P10]</a> to "Lost sync to group" state</li> <li>• <a href="#">θ[P13]</a> to "Synching to group" state</li> </ul>
NOTE – A pair is considered "Synchronized to group" when it is in one of the states: "Synched to group", "Adding to group", "Part of group".		

2) *Modify Table 6/G.998.3 as follows:*

**Table 6/G.998.3 – Aggregation group state machine states definition**

State	Definition	Transition
Down	There are no pairs assigned to the aggregation group, or there are pairs assigned and none of them is in one of the states in which it is "Synchronized to group" (i.e., "Synched to group", "Adding to group", "Part of group")	<ul style="list-style-type: none"> <li>• <a href="#">θ[G1]</a> to "Diag" state</li> </ul>
Diag	One or more of the pairs related to the Aggregation group are in "Synched to group" state, and none of the pairs is in "Part of group" state	<ul style="list-style-type: none"> <li>• <a href="#">θ[G2]</a> to "Down" state</li> <li>• <a href="#">θ[G3]</a> to "Init" state</li> </ul>
Init	Initiating the aggregation group by using the "Sync change" procedure with all of the pairs in that are in "Synched to group" state	<ul style="list-style-type: none"> <li>• <a href="#">θ[G4]</a> to "Diag" state</li> <li>• <a href="#">θ[G5]</a> to "Up" state</li> </ul>
Up	The aggregation group is working in a steady-state and transferring service data	<ul style="list-style-type: none"> <li>• <a href="#">θ[G6]</a> to "Pairs change" state</li> <li>• <a href="#">θ[G7]</a> to "Fast pairs removal" state</li> </ul>
Pairs change	Hitless pairs addition or removal to/from the aggregation group by using the "Sync change" procedure	<ul style="list-style-type: none"> <li>• <a href="#">θ[G4]</a>, <a href="#">θ[G5]</a> to "Up" state</li> <li>• <a href="#">θ[G7]</a> to "Fast pairs removal" state</li> <li>• <a href="#">θ[G8]</a> to "Diag" state</li> </ul>
Fast pairs removal	Fast removal of pairs upon pair's loss of sync to the aggregation group, by using the "Fast change" procedure	<ul style="list-style-type: none"> <li>• <a href="#">θ[G9]</a> to "Up" state</li> <li>• <a href="#">θ[G7]</a> to "Fast pairs removal" state</li> <li>• <a href="#">θ[G10]</a> to "Down" state</li> <li>• <a href="#">θ[G11]</a> to "Diag" state</li> </ul>

3) *In clause A.1, correct figure number as follows:*

**Figure A.26/G.998.3 – Modified Figure 6 – Clock synchronization reference model**