1. Relations with international standards
   This standard based on the ITU-T Recommendation I.431 approved at the WTSC-93.

2. Summary of departures from ITU-T Recommendations
   (1) Exclusion of 2048 kbit/s interface
       <Reasoning>:
       This interface has been already standardized in JT-I431-b.

   (2) Exclusion of power available at NT via the user-network interface.
       <Reasoning>:
       This option is not used in the TTC standard.

   (3) Exclusion of leased line user-network interface
       <Reasoning>:
       This interface has been already standardized in JT-I431-a.

   (4) Exclusion of maintenance loopbacks.
       <Reasoning>:
       This option is not used in the TTC standard.

   (5) Exclusion of option 1 and 4 according to ITU-T Recommendation I.604.
       <Reasoning>:
       Option 2 is used in the TTC standard.

   (6) Exclusion of received signal transients and transmit signal transients for clock synchronization circuits.
       <Reasoning>:
       No need is recognized in Japan.

   (7) Exclusion of performance report message with m-bit.
       <Reasoning>:
       This issue will be standardized at the same time of digital section standardization (ITU-T Recommendation G.963).

   (8) Electrical environment
       <Reasoning>:
       This issue is included in the standard, because specifications for lightning surges in various groundings are inevitable from viewpoint of safety.
       The issue however, is still open for further study because it is being discussed in the ITU-T SG 5 and relevant national
committees.

(9) Power feeding
<Reasoning>: Power feeding is included for clarification because it is not described in Recommendation I.431.

(10) Frame alignment procedures and monitoring for false framing
<Reasoning>: For the above two issues in Recommendation I.431, it is possible to use the CRC-6 procedure to verify the correct frame alignment. But in this standard it is essential to use the CRC-6 procedure to evade false framing.

3. History of revised versions

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Outline</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>April 28, 1987</td>
<td>Established</td>
</tr>
<tr>
<td>3</td>
<td>April 28, 1989</td>
<td>Revised based on &quot;Correction&quot; and &quot;Revision&quot;.</td>
</tr>
<tr>
<td>5</td>
<td>April 27, 1993</td>
<td>Updated based on the result of the standard work progress in WTSC-93 in June, 1993.</td>
</tr>
<tr>
<td>6</td>
<td>April 23, 1997</td>
<td>Deleted the disturbance wave regulation from this standard, in order to specify independently.</td>
</tr>
</tbody>
</table>

4. Others
(1) The following issues are for further study.
- Operational functions
- Electrical environment
- Multiframe structure (use of m bit)
- Maintenance

(2) This standard is concerned with layer 1 characteristics at S and T reference points, and it is applicable to ISDN interface of PBX and so on.

(3) Recommendations and Standards to be referred to
5. **Section that developed this standard**

Technical Committee 2, Working Group1