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SERIES G: TRANSMISSION SYSTEMS AND MEDIA,
DIGITAL SYSTEMS AND NETWORKS

Digital transmission systems – Digital networks –
Management of transport network

**Enterprise viewpoint for pre-provisioned link
connection management**

ITU-T Recommendation G.852.10

(Previously CCITT Recommendation)

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**ENTERPRISE VIEWPOINT FOR PRE-PROVISIONED
LINK CONNECTION MANAGEMENT**

Summary

The pre-provisioned link connection management community is used to assign transport entities (link connections or connection termination points) to a caller and to control and update the available capacity of the linking entity (link or link end) that contains the transport entities. The available capacity of the linking entity contains all the unassigned transport entities. This community should be used in the case where transport entities have already been provisioned inside the linking entity using the pre-provisioned adaptation management service (see G.85x.8 series of Recommendations).

The capability of having pre-provisioned transport entities is available in technologies such as SDH or WDM.

Source

ITU-T Recommendation G.852.10 was prepared by ITU-T Study Group 4 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 26th of March 1999.

FOREWORD

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The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

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Recommendation G.852.10

ENTERPRISE VIEWPOINT FOR PRE-PROVISIONED LINK CONNECTION MANAGEMENT

(Geneva, 1999)

1 Scope

This Recommendation specifies the enterprise viewpoint for the pre-provisioned link connection management of a transport network.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

- [1] ITU-T Recommendation G.851.1 (1996), *Management of the transport network – Application of the RM-ODP framework*.
- [2] ITU-T Recommendation G.852.2 (1999), *Enterprise viewpoint description of transport network resource model*.

3 Definitions

None.

4 Abbreviations

This Recommendation uses the following abbreviations:

Id	Identifier
plcm	Pre-provisioned Link Connection Management
RM-ODP	Reference Model for Open Distributed Processing
SDH	Synchronous Digital Hierarchy
TE	Transport Entity
WDM	Wavelength Division Multiplexing

5 Conventions

None.

6 Community pre-provisioned link connection management

6.1 Purpose

The purpose of this community is to assign transport entities to a caller and to control and update the available capacity of the linking entity. The available capacity of the linking entity contains all the unassigned transport entities. This community should be used in the case where transport entities have already been provisioned inside the linking entity using the adaptation management.

The capability of having pre-provisioned transport entities is available in technologies such as SDH or WDM.

6.2 Role

plcm_caller

This role represents the client invoking the actions defined within this community. One or more caller role occurrences may exist in the community.

NOTE – This assumes the existence of a suitable method for handling concurrence.

plcm_provider

This role represents the server performing the actions defined within this community. One, and only one, provider role occurrence shall exist in the community.

notification receiver

This role represents a receiver of the reporting actions defined within this community. Zero or more notification receiver role occurrences may exist in the community.

layer network domain

This role represents the layer network domain resource defined in Recommendation G.852.2. One or more role occurrences may exist in the community.

linking entity

This role represents the link/topological link resource (arc view) or the link end/topological link end resource (point view) as defined in Recommendation G.852.2. One, and only one, linking entity role occurrence may exist in the community.

transport entity

This role represents the link connection resource (arc view) or the connection termination point resource (point view) as defined in Recommendation G.852.2. One or more transport entity role occurrences may exist in the community.

6.3 Community policy

OBLIGATION resourceConsistency

This community applies for both arc-oriented view and point-oriented view. The roles linking entity and transport entity can be played by either arc-oriented resources or point-oriented resources, but consistently: those two roles can be played either by arc-oriented resources **or** by point-oriented resources, but **not** by a mixture of arc-oriented and point-oriented resources. In an arc-oriented view, the point-oriented resources may only exist at the boundary of a subnetwork.

OBLIGATION scope

Only properties that are explicitly stated in this community are valid and can be accessed by both callers and provider of this community. Conformance to this service depends only on the explicit specification of this service. Any other modifications outside of this community are not relevant for conformance.

OBLIGATION serviceRejection

In case of service rejection, the provider shall identify the obligation or prohibition which is not fulfilled either by the callers or the provider. The provider shall give an indication about any execution infrastructure problem. In this case, the level of detail indicated by the provider shall be dependent on the shared knowledge of the infrastructure on which the community is running. For the case where any wrong parameters have been passed to the provider, the return exception shall indicate these parameters.

OBLIGATION signalId

Each resource in the community shall have the same signal identification.

OBLIGATION viewingCapabilities

The provider shall support a view of the resource properties and relationships that have been identified or permitted in the service contract with the caller.

OBLIGATION belongingConstraints

All resources managed in the community actions shall belong to the community.

OBLIGATION architecturalConstraints

All the modifications performed on the resources in the community shall respect the architectural constraints expressed in Recommendation G.852.2.

OBLIGATION assignmentCondition

The assignment of a transport entity has no consequence on the other resources of this community.

PERMISSION useUserLabel

The caller may change the user-defined labels of the transport entities that have been assigned.

OBLIGATION notifyUserLabelChange

If PERMISSION useUserLabel is used by the caller, any change of the user-defined label of a transport entity shall be notified to the notification receiver.

6.4 Action

6.4.1 Assign transport entities

This action is used to assign transport entities inside a particular linking entity, if the available linking entity capacity makes it possible. The caller may require particular transport entities.

ACTION_POLICY

OBLIGATION supplyLinkingEntityId

The caller shall uniquely identify a linking entity that contains the transport entities.

OBLIGATION noExistingLinkingEntity

This action will fail if the supplied linking entity does not exist within the layer network domain. In the case of failure, the provider shall return the identifier in error.

PERMISSION selectTransportEntities

The caller may select particular transport entities.

OBLIGATION failIfSelectedTENotAvailable

If PERMISSION selectTransportEntities is part of the service contract, the action will fail if at least one of the selected transport entities is not available within the linking entity. In this case the identification of this transport entity shall be given back to the caller.

OBLIGATION failIfSelectedTEAlreadyAssigned

If PERMISSION selectTransportEntities is part of the service contract, the action will fail if at least one of the selected transport entities is already assigned. In this case the identification of this transport entity shall be given back to the caller.

OBLIGATION supplyNumberOfTE

If PERMISSION selectTransportEntities is **not** part of the service contract, the caller shall identify the number of transport entities to be assigned.

OBLIGATION failIfNotEnoughAvailableTE

If PERMISSION selectTransportEntities is **not** part of the service contract, the action will fail if there are not enough available transport entities. The number of requested transport entities shall be returned to the caller.

OBLIGATION callerId

The caller will give the provider its own identifier to log the assignment of the transport entities to that caller.

OBLIGATION deduceAvailableCapacity

In case of a successful action, the provider shall deduce the new number of available transport entities within the linking entity as follows: the new number of available transport entities is equal to the previous number of available transport entities within the linking entity minus the number of transport entities assigned by this action.

OBLIGATION returnAssignedTEId

When the action is successful, the provider shall return to the caller the unique transport entity identifiers.

6.4.2 De-assign transport entities

This action is used to de-assign transport entities within a linking entity. The transport entities specified by the caller will not be assigned anymore and are made available for new assignment in the linking entity.

ACTION_POLICY

OBLIGATION supplyLinkingEntity

The caller shall uniquely identify a linking entity that contains the transport entities.

OBLIGATION noExistingLinkingEntity

This action will fail if the supplied linking entity does not exist within the layer network domain. In the case of failure, the provider shall return the identifier in error.

OBLIGATION supplyTransportEntities

The caller shall uniquely identify the assigned transport entities to be de-assigned.

OBLIGATION supplyCallerId

The caller shall provide his unique identifier to the provider.

OBLIGATION failIfSelectedTENotAvailable

The action will fail if at least one of the selected transport entities is not available. In this case the identification of this transport entity shall be given back to the caller.

OBLIGATION failIfSelectedTENotAssigned

The action will fail if at least one of the selected transport entities is not assigned to the invoking caller. In this case the identification of this transport entity shall be given back to the caller.

OBLIGATION deduceAvailableCapacity

When the action is successful, the provider shall deduce the new number of available transport entities within the linking entity as follows: the new number of available transport entities is equal to the previous number of available transport entities within the linking entity plus the number of transport entities newly de-assigned by this action.

OBLIGATION successNotifyCaller

When the action is successful, the provider shall indicate this to the caller.

6.4.3 Report transport entities change

This action is used by the provider to report to the notification receiver the change of the assignment status of transport entities, i.e. the transport entities have been assigned or de-assigned.

ACTION_POLICY

OBLIGATION supplyLinkingEntityId

The notification receiver shall be informed by the provider of the identifier of the linking entity that contains the changed transport entities.

OBLIGATION informTransportEntityIds

The notification receiver shall be informed by the provider of the identifiers of the transport entities whose assignment status has changed.

OBLIGATION informCallerId

In case of assignment, the notification receiver shall be informed by the provider to which caller the transport entities have been assigned.

OBLIGATION informDe-assignment

In case of de-assignment, the notification receiver shall be informed by the provider that the transport entities have been de-assigned.

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