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**ITU-T**

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**G.852.1**

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

Digital transmission systems – Digital networks – SDH  
network characteristics

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**Management of the transport network –  
Enterprise viewpoint for simple subnetwork  
connection management**

ITU-T Recommendation G.852.1

(Previously CCITT Recommendation)

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ITU-T G-SERIES RECOMMENDATIONS  
**TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS**

INTERNATIONAL TELEPHONE CONNECTIONS AND CIRCUITS	G.100–G.199
<b>INTERNATIONAL ANALOGUE CARRIER SYSTEM</b>	
GENERAL CHARACTERISTICS COMMON TO ALL ANALOGUE CARRIER-TRANSMISSION SYSTEMS	G.200–G.299
INDIVIDUAL CHARACTERISTICS OF INTERNATIONAL CARRIER TELEPHONE SYSTEMS ON METALLIC LINES	G.300–G.399
GENERAL CHARACTERISTICS OF INTERNATIONAL CARRIER TELEPHONE SYSTEMS ON RADIO-RELAY OR SATELLITE LINKS AND INTERCONNECTION WITH METALLIC LINES	G.400–G.449
COORDINATION OF RADIOTELEPHONY AND LINE TELEPHONY	G.450–G.499
<b>TRANSMISSION MEDIA CHARACTERISTICS</b>	G.600–G.699
<b>DIGITAL TRANSMISSION SYSTEMS</b>	
TERMINAL EQUIPMENTS	G.700–G.799
General	G.700–G.709
Coding of analogue signals by pulse code modulation	G.710–G.719
Coding of analogue signals by methods other than PCM	G.720–G.729
Principal characteristics of primary multiplex equipment	G.730–G.739
Principal characteristics of second order multiplex equipment	G.740–G.749
Principal characteristics of higher order multiplex equipment	G.750–G.759
Principal characteristics of transcoder and digital multiplication equipment	G.760–G.769
Operations, administration and maintenance features of transmission equipment	G.770–G.779
Principal characteristics of multiplexing equipment for the synchronous digital hierarchy	G.780–G.789
Other terminal equipment	G.790–G.799
DIGITAL NETWORKS	G.800–G.899
General aspects	G.800–G.809
Design objectives for digital networks	G.810–G.819
Quality and availability targets	G.820–G.829
Network capabilities and functions	G.830–G.839
<b>SDH network characteristics</b>	<b>G.840–G.899</b>
DIGITAL SECTIONS AND DIGITAL LINE SYSTEM	G.900–G.999
General	G.900–G.909
Parameters for optical fibre cable systems	G.910–G.919
Digital sections at hierarchical bit rates based on a bit rate of 2048 kbit/s	G.920–G.929
Digital line transmission systems on cable at non-hierarchical bit rates	G.930–G.939
Digital line systems provided by FDM transmission bearers	G.940–G.949
Digital line systems	G.950–G.959
Digital section and digital transmission systems for customer access to ISDN	G.960–G.969
Optical fibre submarine cable systems	G.970–G.979
Optical line systems for local and access networks	G.980–G.999

*For further details, please refer to ITU-T List of Recommendations.*

## **ITU-T RECOMMENDATION G.852.1**

### **MANAGEMENT OF THE TRANSPORT NETWORK – ENTERPRISE VIEWPOINT FOR SIMPLE SUBNETWORK CONNECTION MANAGEMENT**

#### **Summary**

This Recommendation contains the enterprise viewpoint specification for managing a transport network from a network viewpoint. In particular this Recommendation details the enterprise viewpoint for Subnetwork Connection Management. The specification was written in accordance with G.851.1 Management of the Transport Network – Application of the RM-ODP Framework.

#### **Source**

ITU-T Recommendation G.852.1 was prepared by ITU-T Study Group 15 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 8th of November 1996.

## FOREWORD

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In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

## NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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As of the date of approval of this Recommendation, the ITU had/had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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## CONTENTS

		<b>Page</b>
1	Scope.....	1
2	References.....	1
3	Definitions .....	1
4	Abbreviations.....	1
5	Enterprise viewpoint.....	1
	Annex A – COMMUNITY ssc "Simple Subnetwork Connection Configuration".....	2
A.1	PURPOSE.....	2
A.2	ROLE (See Figure A.1) .....	2
A.3	POLICY .....	2
A.4	ACTION .....	3
	A.4.1 ssc1 "Setup Point-to-Point SNC".....	3
	A.4.2 ssc2 "Release Point-to-Point SNC" .....	3
A.5	ACTIVITY.....	4
A.6	CONTRACT.....	4
	Annex B – COMMUNITY sfm "Simple Failure Monitoring" .....	4
B.1	PURPOSE.....	4
B.2	ROLE (See Figure B.1).....	4
B.3	POLICY .....	5
B.4	ACTION .....	5
	B.4.1 sfm1 "Report Failure".....	5
	B.4.2 sfm2 "Report Recovery".....	5
	B.4.3 sfm3 "Suspend Monitor Reporting" .....	5
	B.4.4 sfm4 "Resume Monitor Reporting" .....	6
B.5	ACTIVITY.....	6
B.6	CONTRACT.....	6
	Annex C – COMMUNITY smsc "Simple Monitored Subnetwork Connection Configuration" .....	6
C.1	PURPOSE.....	6
C.2	ROLE (see Figure C.1).....	7
C.3	POLICY .....	7
C.4	ACTION .....	8
	C.4.1 ssc1 "Setup Point-to-Point SNC".....	8
	C.4.2 sfm1 "Report Failure" .....	9

	<b>Page</b>
C.4.3 sfm2 "Report Recovery" .....	9
C.4.4 sfm3 "Suspend Monitor Reporting" .....	10
C.4.5 sfm4 "Resume Monitor Reporting" .....	10
C.4.6 ssc2 "Release Point-to-Point SNC" .....	10
C.5 ACTIVITY.....	11
C.6 CONTRACT.....	11

## **Recommendation G.852.1**

### **MANAGEMENT OF THE TRANSPORT NETWORK – ENTERPRISE VIEWPOINT FOR SIMPLE SUBNETWORK CONNECTION MANAGEMENT**

*(Geneva, 1996)*

#### **1 Scope**

This Recommendation describes the enterprise viewpoint specification for Simple Subnetwork 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.

- ITU-T Recommendation G.805 (1995), *Generic functional architecture of transport networks*.
- ITU-T Recommendation G.851.1 (1996), *Management of the transport network – Application of the RM-ODP framework*.

#### **3 Definitions**

None.

#### **4 Abbreviations**

This Recommendation uses the following abbreviations:

ITU-T        International Telecommunication Union – Telecommunication Standardization Sector

RM-ODP     Reference Model for Open Distributed Processing

#### **5 Enterprise viewpoint**

The enterprise specifications contained in the annexes were written in accordance with Recommendation G.851.1 that defines the RM-ODP methodology employed to generate enterprise specifications in regard to the management of transport networks.

The enterprise specifications assume the existence of G.805 network resources and are thus written from a Network View of managing a transport network, as opposed to network management based upon a Network Element View.

## ANNEX A

### COMMUNITY ssc "Simple Subnetwork Connection Configuration"

#### A.1 PURPOSE

"The objective of the community is to configure point-to-point subnetwork connections between pairs of ports, which have been previously populated on the boundary of a subnetwork."

#### A.2 ROLE (See Figure A.1)

**caller** "This role reflects the client of the actions defined in this community.

One and only one caller role occurrences may exist in the community."

**provider** "This role reflects the server of the actions defined in this community.

One and only one provider role occurrence must exist in the community."

**port** "This role reflects the G.805 port resource used in the actions defined in this community.

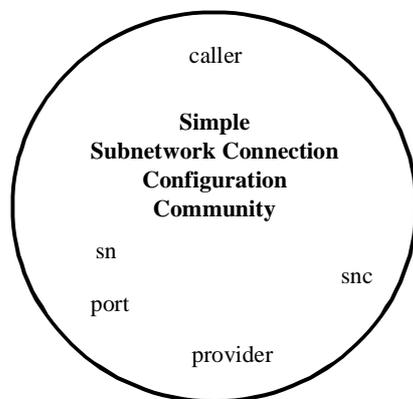
Zero or more port role occurrences may exist in the community."

**sn** "This role reflects the G.805 subnetwork resource used in the actions defined in this community.

One and only one sn role occurrence must exist in the community."

**snc** "This role reflects the G.805 subnetwork connection resource used in the actions defined in this community.

Zero or more snc role occurrences may exist in the community."



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**Figure A.1/G.852.1 – ROLE in the Simple Subnetwork Connection Community**

#### A.3 POLICY

##### OBLIGATION OBLG\_1

"The provider shall support such viewing of the resource properties and relationships which have been identified and allowed in the service contract with the caller."

## **A.4 ACTION**

### **A.4.1 ssc1 "Setup Point-to-Point SNC"**

"This action sets up a point-to-point subnetwork connection between two ports on the same subnetwork."

#### **ACTION\_POLICY**

##### **OBLIGATION OBLG\_1**

"This action must be provided in respect to all the action policies or it fails. In the event the action fails, the provider shall report to the caller which action policy has been violated."

##### **OBLIGATION OBLG\_2**

"The caller shall identify two ports which must be part of the community."

##### **OBLIGATION OBLG\_3**

"In case of service establishment, the provider shall inform the caller of the subnetwork connection identifier that is unique in the community for the duration of the subnetwork connection."

##### **PERMISSION PERM\_1**

"The caller may provide a user identifier for the requested subnetwork connection."

##### **OBLIGATION OBLG\_4**

"If PERM\_1 is part of the contracted service, then the provider shall use the user identifier, if provided, as the unique subnetwork connection identifier when communicating with the caller."

##### **OBLIGATION OBLG\_5**

"If PERM\_1 is part of the contracted service and if the user identifier is not unique in the provider context, then the provider shall reject the user identifier and inform the caller of the rejection."

##### **PERMISSION PERM\_3**

"The caller may specify the characteristics of the requested transport service (e.g. bandwidth, directionality, route selection criteria, availability, etc.). These are contract and technology specific."

##### **PROHIBITION PROH\_1**

"The provider shall not satisfy the request if one or both of the ports are already used in a subnetwork connection."

### **A.4.2 ssc2 "Release Point-to-Point SNC"**

"This action is used to release a simple point-to-point subnetwork connection."

#### **ACTION\_POLICY**

##### **OBLIGATION OBLG\_1**

"This action must be provided in respect to all the action policies or it fails. In the event the action fails, the provider shall report to the caller which action policy has been violated."

## OBLIGATION OBLG\_2

"The caller shall uniquely identify an existing subnetwork connection via its subnetwork connection identifier."

## OBLIGATION OBLG\_3

"The provider shall inform the caller of the subnetwork connection identifier of the subnetwork connection which has been released."

## A.5 ACTIVITY

"None".

## A.6 CONTRACT

"Service features subject to negotiation as part of a service contract shall include:

- degree of visibility of resource (their properties and relationships); and
- other features which are for future study."

## ANNEX B

### COMMUNITY sfm "Simple Failure Monitoring"

#### B.1 PURPOSE

"The objective of the community is to allow monitoring for a failure condition in a managed resource that makes it incapable of performing its normal function."

#### B.2 ROLE (See Figure B.1)

**caller** "This role reflects the client of the actions defined in this community.

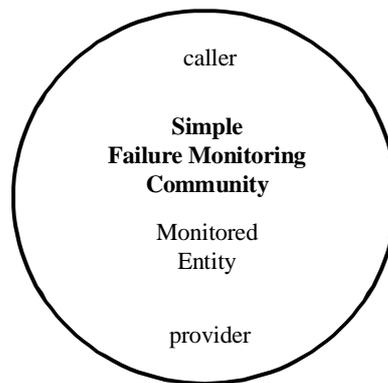
One or more caller role occurrences can exist in the community."

**provider** "This role reflects the server of the actions defined in this community.

One and only one provider role occurrence must exist in the community."

**monitored\_entity** "This role reflects the resource in the actions defined in this community subject to simple failure monitoring.

Zero or more monitored\_entity role occurrences can exist in the community."



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**Figure B.1/G.852.1 – ROLE in the Failure Monitoring Community**

### **B.3 POLICY**

#### **OBLIGATION OBLG\_1**

"The provider shall support such viewing of the resource properties and relationships which have been identified and allowed the service contract with the caller."

#### **OBLIGATION OBLG\_2**

"The provider shall have a unique identity for each Monitored\_entity in the community."

### **B.4 ACTION**

#### **B.4.1 sfm1 "Report Failure"**

"This action is used by the provider to report on the failure of the monitored\_entity to perform its function."

#### **ACTION\_POLICY**

##### **OBLIGATION OBLG\_1**

"The caller will be informed by the provider of the identity of a monitored\_entity if a failure condition in a resource supporting that monitored\_entity results in the inability of the monitored\_entity to provide its function."

#### **B.4.2 sfm2 "Report Recovery"**

"This action is used by the provider to report on the recovery of the monitored\_entity to perform its function."

#### **ACTION\_POLICY**

##### **OBLIGATION OBLG\_1**

"The caller will be informed by the provider of the identity of a monitored\_entity if a failure condition in a resource supporting that monitored\_entity disappears and its function is re-established."

#### **B.4.3 sfm3 "Suspend Monitor Reporting"**

"This action is used to suspend failure and recovery reporting of the monitored\_entity."

## **ACTION\_POLICY**

### **OBLIGATION OBLG\_1**

"This action must be provided in respect to all the action policies or it fails. In the event the action fails, the provider shall report to the caller which action policy has been violated."

### **OBLIGATION OBLG\_2**

"The caller shall identify the monitored\_entity for which monitor reporting is requested to be suspended."

### **OBLIGATION OBLG\_3**

"If OBLG\_2, then the provider shall suspend monitor reporting."

## **B.4.4 sfm4 "Resume Monitor Reporting"**

"This action is used to resume failure and recovery reporting of the Monitored\_entity."

## **ACTION\_POLICY**

### **OBLIGATION OBLG\_1**

"This action must be provided in respect to all the action policies or it fails. In the event the action fails, the provider shall report to the caller which action policy has been violated."

### **OBLIGATION OBLG\_2**

"The caller shall identify the monitored\_entity for which monitor reporting is requested to be resumed."

### **OBLIGATION OBLG\_3**

"If OBLG\_2 then the provider shall resume monitor reporting."

## **B.5 ACTIVITY**

"None."

## **B.6 CONTRACT**

"Service features subject to negotiation as part of a service contract shall include:

- degree of visibility of resource (their properties and relationships); and
- other features which are for future study."

## **ANNEX C**

### **COMMUNITY smscc "Simple Monitored Subnetwork Connection Configuration"<sup>1</sup>**

#### **C.1 PURPOSE**

"The objective of the community is to configure point-to-point subnetwork connections and to monitor them for failure.

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<sup>1</sup> This annex presents a combination of communities. While the objective for the combined community is agreed, the general method of combining and representation of combination is for further study.

The following communities are used by this community:

- <sscc> Simple Subnetwork Connection Configuration Community; and
- <sfm> Simple Failure Monitoring Community.

Rules concerning the use of these communities are detailed in the community policies and action policies of this community."

### C.2 ROLE (see Figure C.1)

**caller** "This role reflects the client of the actions defined in this community and assumes the role of the caller in other communities used by this community.

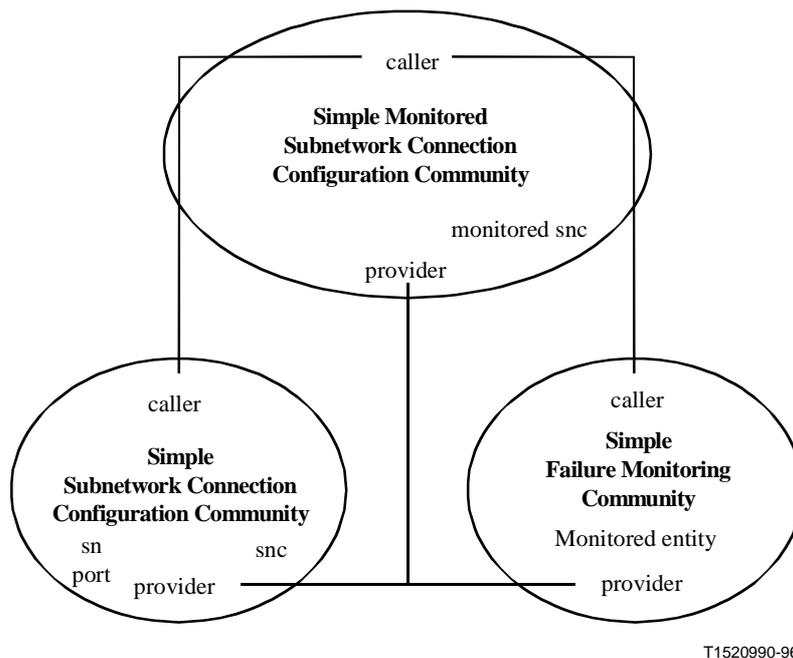
One and only one caller role occurrences may exist in the community."

**provider** "This role reflects the server of the actions defined in this community and assumes the role of the provider in other communities used by this community.

One and only one provider role occurrence must exist in the community."

**monitored\_snc** "This is a role that assumes the role of the G.805 subnetwork connection resource and the monitored\_entity resource roles that are used in the actions called by this community.

Zero or more monitored\_snc role occurrences can exist in the community."



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**Figure C.1/G.852.1 – ROLE in Simple Monitored Subnetwork Configuration Community and Intercommunity Relationships**

### C.3 POLICY

#### OBLIGATION OBLG\_1

"The caller of this community shall be PERMISSION PERMITTED to assume the role of the caller in the following communities:

- <sscc> Simple Subnetwork Connection Configuration Community; and

- <sfm> Simple Failure Monitoring Community."

#### OBLIGATION OBLG\_2

"The provider of this community shall be permitted to assume the role of the provider in the following communities:

- <sscc> Simple Subnetwork Connection Configuration Community; and
- <sfm> Simple Failure Monitoring Community."

#### OBLIGATION OBLG\_3

"The monitored subnetwork connection resource shall be recognized by the providers in the called communities as either the subnetwork connection or monitored\_entity."

#### OBLIGATION OBLG\_4

"The Setup Point-to-Point Subnetwork Connection action shall be the first action executed from the supporting communities by this community."

#### OBLIGATION OBLG\_5

"The subnetwork connection shall be subject to immediate monitoring as part of the action in OBLG\_4."

#### OBLIGATION OBLG\_6

"The provider shall support such viewing of the resource properties and relationships which have been identified and allowed in the service contract with the caller."

### **C.4 ACTION**

"NOTE – There are no actions defined which are unique to this community. All actions are used from other communities.

All reference to providers in the below actions will have their provider role assumed by the provider of this community.

All reference to callers in the below actions will have their caller role assumed by the caller of this community.

Any reference to subnetwork connection in the below actions will have that role assumed by the monitored subnetwork connection of this community.

Any reference to monitored\_entity in the below actions will have that role assumed by the monitored subnetwork connection of this community."

#### **C.4.1 ssc1 "Setup Point-to-Point SNC"**

"This action sets up a point-to-point subnetwork connection between two ports on the same subnetwork."

#### **ACTION\_POLICY**

##### OBLIGATION OBLG\_1

"This action must be provided in respect to all the action policies or it fails. In the event the action fails, the provider shall report to the caller which action policy has been violated."

#### OBLIGATION OBLG\_2

"The caller shall identify two ports which must be part of the community."

#### OBLIGATION OBLG\_3

"In case of service establishment, the provider shall inform the caller of the Subnetwork Connection identifier that is unique in the community for the duration of the subnetwork connection."

#### PERMISSION PERM\_1

"The caller may provide a user identifier for the requested subnetwork connection."

#### OBLIGATION OBLG\_4

"If PERM\_1 is part of the contracted service then the provider shall use the user identifier as the unique subnetwork connection identifier when communicating with the caller."

#### OBLIGATION OBLG\_5

"If PERM\_1 is part of the contracted service and if the user identifier is not unique in the provider context, then the provider shall reject the user identifier and inform the caller of the rejection."

#### PERMISSION PERM\_3

"The caller may specify the characteristics of the requested Transport Service (e.g. bandwidth, directionality, route selection criteria, availability, etc.). These are contract and technology specific."

#### PROHIBITION PROH\_1

"The provider shall not satisfy the request if one or both of the ports are already used in a subnetwork connection."

### **C.4.2 sfm1 "Report Failure"**

"This action is used by the provider to report on the failure of the monitored\_entity to perform its function."

#### **ACTION\_POLICY**

##### OBLIGATION OBLG\_1

"The caller will be informed by the provider of the identity of a monitored\_entity if a failure condition in a resource supporting that monitored\_entity results in the inability of the monitored\_entity to provide its function."

### **C.4.3 sfm2 "Report Recovery"**

"This action is used by the provider to report on the recovery of the monitored\_entity to perform its function."

#### **ACTION\_POLICY**

##### OBLIGATION OBLG\_1

"The caller will be informed by the provider of the identity of a monitored\_entity if a failure condition in a resource supporting that monitored\_entity disappears and its function is re-established."

#### **C.4.4 sfm3 "Suspend Monitor Reporting"**

"This action is used to suspend failure and recovery reporting of the monitored\_entity."

##### **ACTION\_POLICY**

###### **OBLIGATION OBLG\_1**

"This action must be provided in respect to all the action policies or it fails. In the event the action fails, the provider shall report to the caller which action policy has been violated."

###### **OBLIGATION OBLG\_2**

"The caller shall identify the monitored\_entity for which monitor reporting is requested to be suspended."

###### **OBLIGATION OBLG\_3**

"If OBLG\_2 then the provider shall suspend monitor reporting."

#### **C.4.5 sfm4 "Resume Monitor Reporting"**

"This action is used to resume failure and recovery reporting of the monitored\_entity."

##### **ACTION\_POLICY**

###### **OBLIGATION OBLG\_1**

"This action must be provided in respect to all the action policies or it fails. In the event the action fails, the provider shall report to the caller which action policy has been violated."

###### **OBLIGATION OBLG\_2**

"The caller shall identify the monitored\_entity for which monitor reporting is requested to be resumed."

###### **OBLIGATION OBLG\_3**

"If OBLG\_2, then the provider shall resume monitor reporting."

#### **C.4.6 ssc2 "Release Point-to-Point SNC"**

"This action is used to release a simple point-to-point subnetwork connection."

##### **ACTION\_POLICY**

###### **OBLIGATION OBLG\_1**

"This action must be provided in respect to all the action policies or it fails. In the event the action fails, the provider shall report to the caller which action policy has been violated."

###### **OBLIGATION OBLG\_2**

"The caller shall uniquely identify an existing subnetwork connection via its subnetwork connection identifier."

###### **OBLIGATION OBLG\_3**

"The provider shall inform the caller of the subnetwork connection identifier of the subnetwork connection which has been released."

## **C.5 ACTIVITY**

"None."

## **C.6 CONTRACT**

"Service features subject to negotiation as part of a service contract shall include:

- degree of visibility of resource (their properties and relationships); and
- other features which are for future study."

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