



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

M.3120

Amendment 1

(05/2002)

SERIES M: TMN AND NETWORK MAINTENANCE:
INTERNATIONAL TRANSMISSION SYSTEMS,
TELEPHONE CIRCUITS, TELEGRAPHY, FACSIMILE
AND LEASED CIRCUITS

Telecommunications management network

CORBA generic network and network element level
information model

Amendment 1: Protection switching

ITU-T Recommendation M.3120 (2001) – Amendment 1

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TMN AND NETWORK MAINTENANCE: INTERNATIONAL TRANSMISSION SYSTEMS, TELEPHONE CIRCUITS, TELEGRAPHY, FACSIMILE AND LEASED CIRCUITS

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ITU-T Recommendation M.3120

CORBA generic network and network element level information model

Amendment 1 Protection switching

Summary

This amendment provides protection switching enhancements to the generic network information model. The model describes protection switching managed object classes and their properties that are generic and useful to describe information exchanged across all interfaces defined in M.3010 TMN architecture. These generic managed object classes are intended to be applicable across different technologies, architectures and services. The protection switching managed object classes in this amendment may be specialized to support the management of various telecommunications networks.

Source

Amendment 1 to ITU-T Recommendation M.3120 (2001) was prepared by ITU-T Study Group 4 (2001-2004) and approved under the WTSA Resolution 1 procedure on 29 May 2002.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

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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ITU-T Recommendation M.3120

CORBA generic network and network element level information model

Amendment 1 Protection switching

1 Scope

This amendment provides protection switching model enhancements to the CORBA generic network and NE level information model. The IDL model describes protection switching managed object classes and their properties that are generic and useful to describe information exchanged across all interfaces defined in M.3010 TMN architecture. These generic protection switching object classes are intended to be applicable across different technologies, architectures and services. They can be extended by various telecommunication industries for managing specific network technologies, such as ATM, SONET/SDH and Ethernet.

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; 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 Q.816 (2001), *CORBA-based TMN services*.
- [2] ITU-T Recommendation Q.816.1 (2001), *CORBA-based TMN services: Extensions to support coarse-grained interfaces*.
- [3] ITU-T Recommendation X.780 (2001), *TMN Guidelines for defining CORBA managed objects*.
- [4] ITU-T Recommendation X.780.1 (2001), *TMN Guidelines for defining coarse-grained CORBA managed objects interfaces*.
- [5] ITU-T Recommendation M.3120 (2001), *CORBA generic network and network element level information model*.
- [6] ITU-T Recommendation M.3100 (1995), *Generic network information model, plus Amendment 2* (2000).
- [7] ITU-T Recommendation G.774 (2001), *Synchronous digital hierarchy (SDH) – management information model for the network element view*.
- [8] ITU-T Recommendation G.774.3 (2001), *Synchronous digital hierarchy (SDH) – management of multiplex-section protection for the network element view*.

3 Overview of the protection switching information model

Clause 4 defines a set of CORBA IDL interfaces for the protecting switching information model. These interfaces are translated manually from a set of ITU-T Recs. M.3100 Amendment 2 and G.774.3 GDMO managed object classes following the TMN CORBA framework and guidelines given in ITU-T Recs. Q.816 and X.780 for fine-grained CORBA interface.

In addition to the fine-grained interfaces in 4.5, a companion set of Façade interfaces are defined in 5.6. These façade interfaces are defined according to the coarse-grained framework and guidelines given in ITU-T Recs. Q.816.1 and X.780.1 for supporting coarse-grained CORBA interface. The name of these façade interfaces are the names of the corresponding fine-grained interfaces appended with "_F" (an underscore followed by a capital "F").

This amendment IDL is an integral part of ITU-T Rec. M.3120. This implies that all definitions (object classes, type, structure, etc.) defined in ITU-T Rec. M.3120 are in the same IDL module and can be referenced without the module identifier.

The IDL in this amendment has been compiled successfully without syntax error. The compiler used claims CORBA 2.3 compliance, which includes value type and M4 macro capabilities.

Figures 1 and 2 show the inheritance, containment, and association relationship of the CORBA interfaces defined in this Recommendation. Note that façade interfaces follow the same inheritance hierarchy relationship as the corresponding fine-grained interfaces. It should also be noted that additional interfaces, although required, are not shown in the figures. Examples are the factory classes.

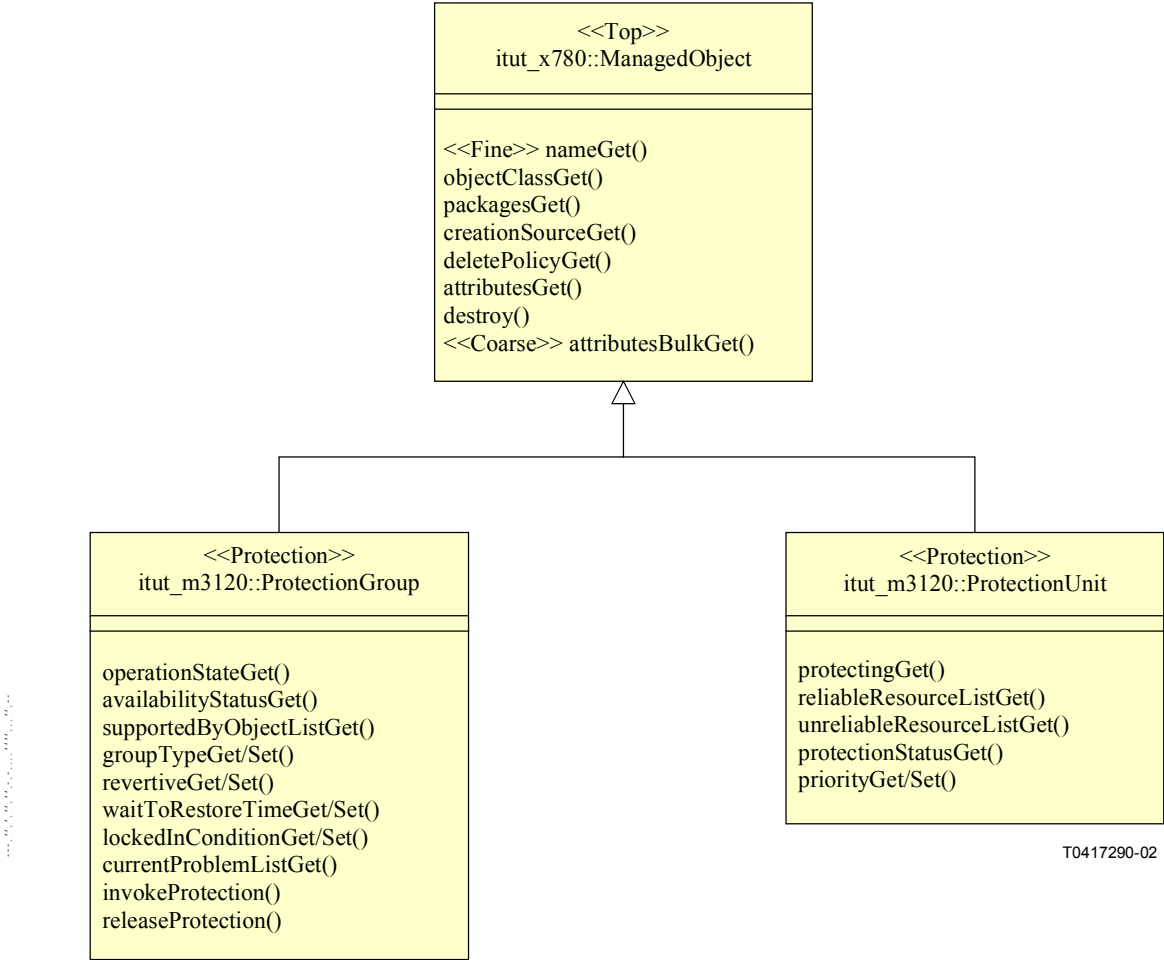


Figure 1/M.3120 – Inheritance relationship

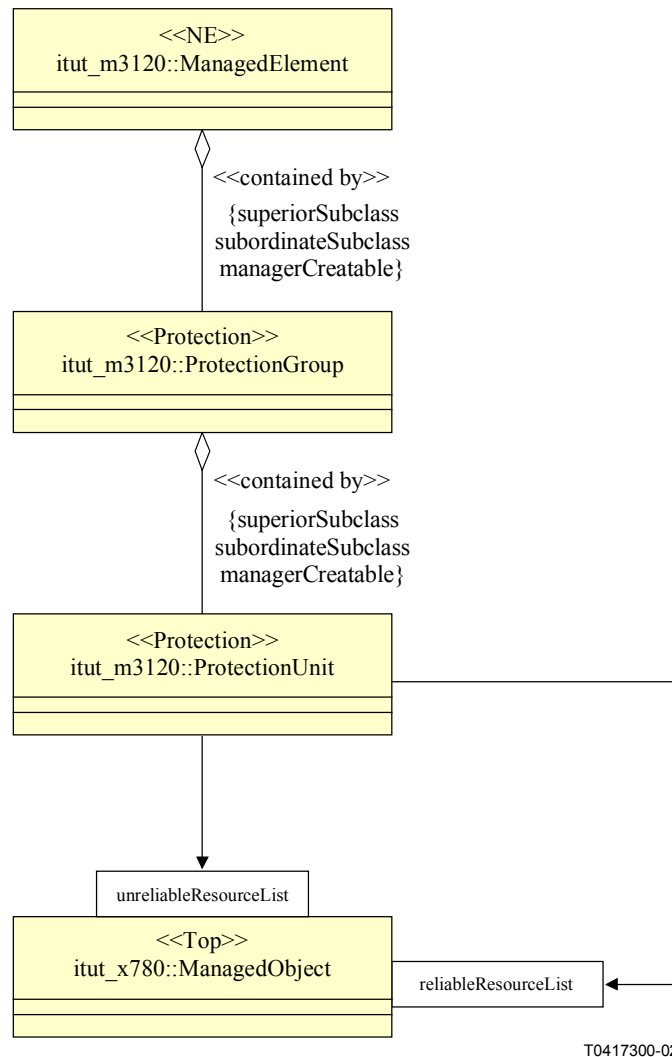


Figure 2/M.3120 – Containment and association relationship

4 Information Model IDL

```

#ifndef _itut_m3120_amd1_idl_
#define _itut_m3120_amd1_idl_

```

```

#include <itut_m3120.idl>

```

```

#pragma prefix "itu.int"

```

```

/**

```

This IDL code is intended to be stored in a file named "itut_m3120_amd1.idl" located in the search path used by IDL compilers on your system. The M.3120 main module (defined in M.3120) is contained in a separate file named "itut_m3120.idl"

```

*/

```

```

/**

```

This fragment is added to the module, itut_m3120, which contains IDL definition based on objects defined in M.3100 and G.855.1.

```
*/  
module itut_m3120  
{
```

```
/**
```

4.1 Imports

```
*/
```

```
/**
```

Types imported from itut_x780

```
*/
```

```
typedef itut_x780::AdditionalTextType AdditionalTextType;  
typedef itut_x780::AdditionalInformationSetType AdditionalInformationSetType;  
typedef itut_x780::CorrelatedNotificationSetType CorrelatedNotificationSetType;  
typedef itut_x780::NotifIDType NotifIDType;  
typedef itut_x780::NullType NullType;
```

```
/**
```

4.2 Forward Declarations

```
*/
```

```
/**
```

Interface forward declarations

```
*/
```

```
    interface ProtectionGroup;  
    interface ProtectionUnit;
```

```
/**
```

Valuetype forward declarations

```
*/
```

```
    valuetype ProtectionGroupValueType;  
    valuetype ProtectionUnitValueType;
```

```
/**
```

Typedefs forward declarations

```
*/
```

```
    typedef MOnameType ProtectionGroupNameType;  
    typedef MOnameType ProtectionUnitNameType;
```

```
/**
```