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SERIES X: DATA NETWORKS AND OPEN SYSTEM
COMMUNICATIONS

OSI management – Management functions and ODMA
functions

ODMA notification dispatch function

ITU-T Recommendation X.770

(Formerly CCITT Recommendation)

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For further details, please refer to the list of ITU-T Recommendations.

ODMA notification dispatch function

Summary

This Recommendation specifies a set of UML descriptions of the OMG notification service, thus placing it within the ODMA architecture (specified in ITU-T X.703) as the ODMA Notification Dispatch Function.

Source

ITU-T Recommendation X.770 was prepared by ITU-T Study Group 4 (2001-2004) and approved under the WTSA Resolution 1 procedure on 19 January 2001.

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 X.770

ODMA notification dispatch function

1 Scope

This ODMA Notification Dispatch Function is part of the Open Distributed Management Architecture, as specified in ITU-T X.703. This Recommendation references the specification of the OMG notification service for the normative specification of the ODP IDL (ITU-T X.950) engineering viewpoint interface definitions.

This Recommendation provides a UML based set of enterprise, information, and computational viewpoint language description of the OMG notification service, thus placing it within ODMA as the Notification Dispatch Function.

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 X.703 (1997) | ISO/IEC 13244:1998, *Information technology – Open Distributed Management Architecture*.
- OMG Document formal/2000-06-20, *Notification service specification*.
- OMG Document formal/1999-06-01, *OMG Modeling Book*.

3 Definitions

3.1 Definitions from notification service

The following terms are used as defined in OMG notification service:

- filter;
- mapping filter;
- structured notifications (content having a fixed header and a flexible body with names for each value element);
- typed notifications (content conforming to a statically defined syntax);
- untyped notifications (content determined at time of delivery).

3.2 Definitions from ITU-T X.703

The following terms are used as defined in ITU-T X.703:

- enterprise viewpoint;
- information viewpoint;
- computational viewpoint;
- engineering viewpoint;

- notification.

3.3 Definitions from UML

The following terms are used as defined in UML:

- association;
- association class;
- class diagram;
- include;
- use case diagram.

4 Abbreviations and conventions

The following abbreviations are used in this Recommendation:

CEC	Cos Event Comm
CN	Cos Notification
CNC	Cos Notification Comm
CNCA	Cos Notify Channel Admin
CNF	Cos Notify Filter
CTEC	Cos Typed Event Comm

The diagrams in this Recommendation use the Notation specified in the OMG UML version 1.3.

5 Enterprise viewpoint UML use-cases for OMG notification service

The actors are shown only at the first level of the use case diagram. Where the detailed decompositions are described for the use cases, the actors are not explicitly shown for readability.

5.1 Use-case overview

See Figure 5-1.

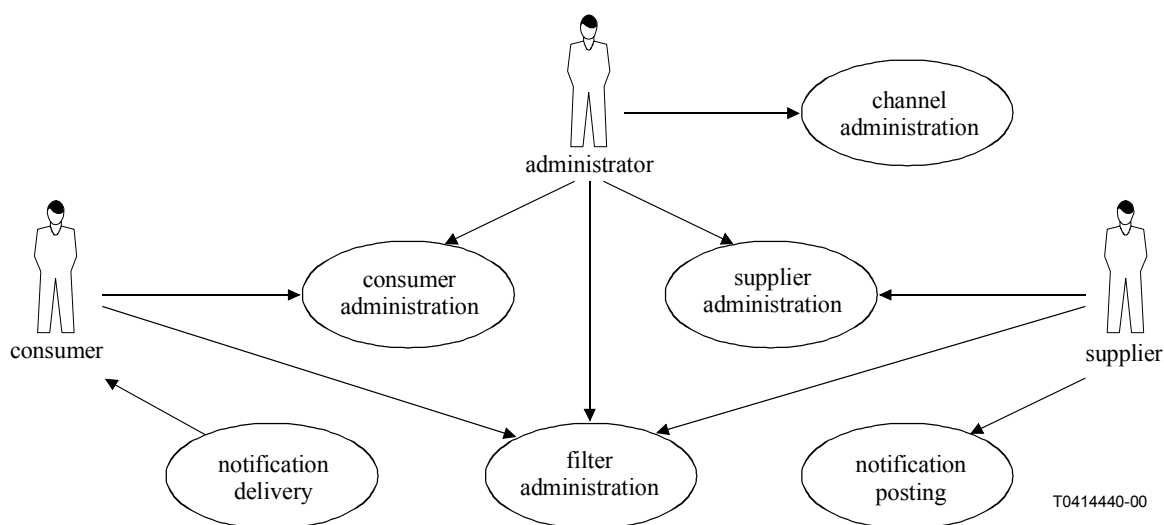


Figure 5-1/X.770 – High-level use case diagram for notification service

In this figure, all the use cases correspond to the various functions that are part of the notification service. These use cases include both administrative activities such as consumer administration, and the activities for dispatching the notifications.

An administrator is responsible for administering the overall properties of notification channels, which are used to receive notifications from suppliers and deliver the received notifications to consumers that have subscribed to the notifications.

Consumers and administrators are involved in the consumer specific administration for notification channels.

Suppliers and administrators are involved in the supplier specific administration for notification channels.

Administrators, suppliers and consumers are involved in the administration of filters, which control the receipt and delivery of notifications.

The supplier is involved in the posting of notifications. The supplier may not know the ultimate consumers of the notifications it supplies.

The consumer receives the delivered notifications. The consumer may not know the originating supplier of the notifications it consumes.

5.2 Notification delivery use case diagram

See Figure 5-2.

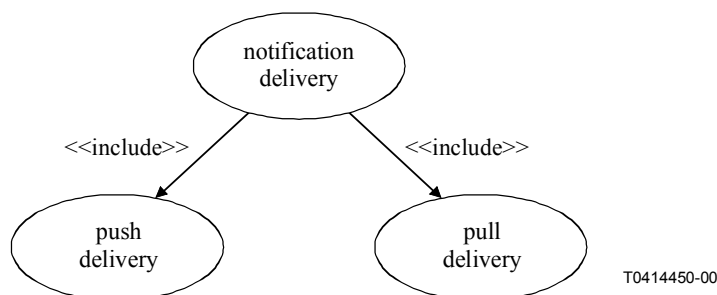


Figure 5-2/X.770 – Push and pull as specialization of notification delivery

Notifications may be delivered using either a push model (notification service invokes an operation on consumer in order to deliver a notification to the consumer) or a pull model (consumer invokes an operation on the notification service in order to have its notifications delivered to itself).

5.3 Notification posting use case diagram

See Figure 5-3.

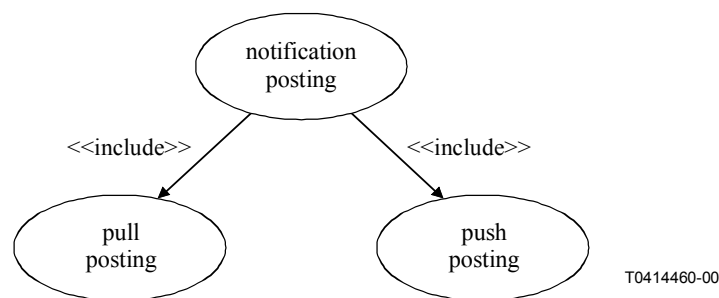


Figure 5-3/X.770 – Push and pull as specialization for notification posting

Notifications may be posted using either a push model (supplier invokes an operation on notification service in order to post a notification) or a pull model (notification service invokes an operation on the supplier to receive posted notifications from the supplier).

5.4 Filter administration use case diagram

See Figure 5-4.

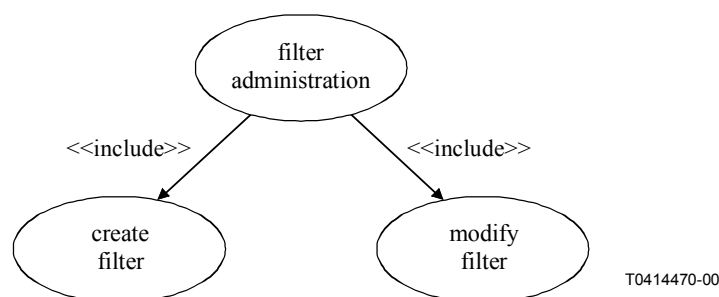


Figure 5-4/X.770 – Filter administration includes creating and modifying filters

There is a need for mechanisms to both create and modify the logical constructs of filters, which control the delivery of notification instances based on the actual values of the parameters of the notification, (e.g. do not deliver notifications which have a error count of zero).

5.5 Consumer administration use case diagram

Figure 5-5 shows how to use the proxy administration corresponding to the consumer. The administration of a consumer proxy includes the following functions: create a proxy, define the filter (associating filter) to determine what notifications are to be received, and attach or detach to/from the proxy. The notify subscribe use case supports the function for the consumer to subscribe to notifications resulting from changes to the notification types published by the supplier.

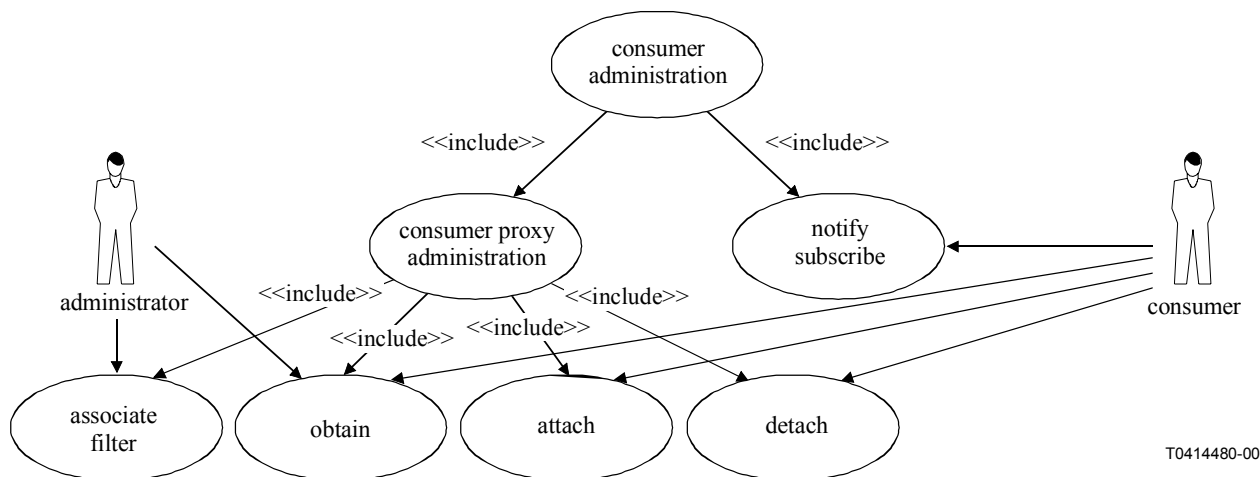


Figure 5-5/X.770 – Consumer administration

5.6 Supplier administration use case

Figure 5-6 shows how to use the proxy administration corresponding to the supplier. The administration of a supplier proxy includes the following functions: create a proxy, define the filter (associating filter) to determine what notifications are to be forwarded and attach or detach to/from the proxy. The notify publish use case supports the function for the supplier to publish changes (addition or deletion) to notification types it supplies.

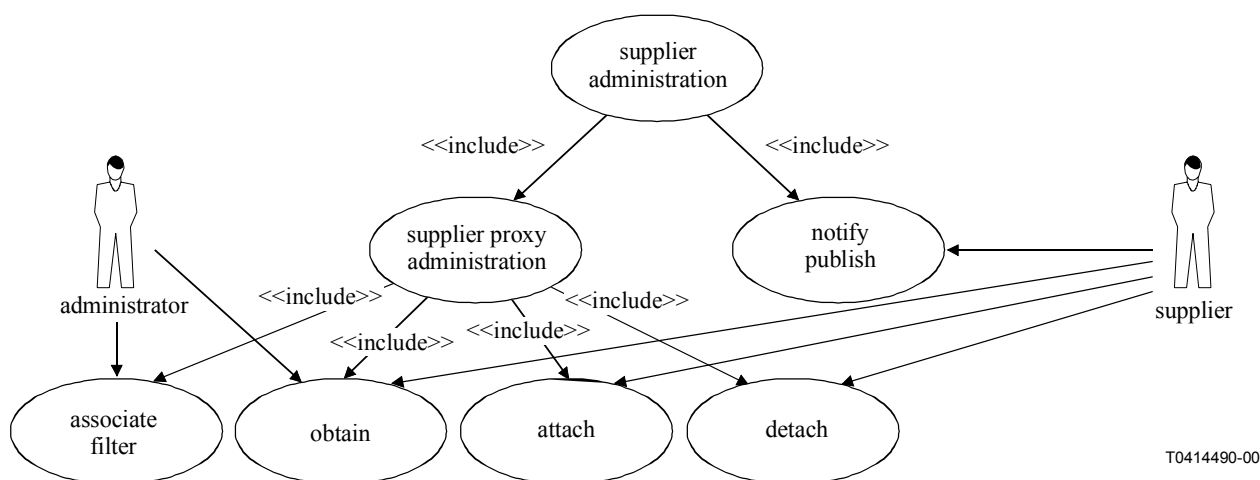


Figure 5-6/X.770 – Supplier administration

6 Information viewpoint model for OMG notification service

This clause shows information object classes and their relationships. Attributes for information object classes are not shown in this clause, for purposes of simplicity of exposition. Not all classes shown in this viewpoint correspond to IDL interfaces for the notification service. See Figure 6-1.