INTERNATIONAL TELECOMMUNICATION UNION

# ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

# I.259.1

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SERIES I: INTEGRATED SERVICES DIGITAL NETWORK

Service capabilities – Supplementary services in ISDN

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# Screening supplementary services: Address screening (ADS)

ITU-T Recommendation I.259-1

(Previously CCITT Recommendation)

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ITU-T I-SERIES RECOMMENDATIONS

**INTEGRATED SERVICES DIGITAL NETWORK**

| | |
|---|---|
| GENERAL STRUCTURE | I.100–I.199 |
| Terminology | I.110–I.119 |
| Description of ISDNs | I.120–I.129 |
| General modelling methods | I.130–I.139 |
| Telecommunication network and service attributes | I.140–I.149 |
| General description of asynchronous transfer mode | I.150–I.199 |
| SERVICE CAPABILITIES | I.200–I.299 |
| Scope | I.200–I.209 |
| General aspects of services in ISDN | I.210–I.219 |
| Common aspects of services in the ISDN | I.220–I.229 |
| Bearer services supported by an ISDN | I.230–I.239 |
| Teleservices supported by an ISDN | I.240–I.249 |
| **Supplementary services in ISDN** | **I.250–I.299** |
| OVERALL NETWORK ASPECTS AND FUNCTIONS | I.300–I.399 |
| Network functional principles | I.310–I.319 |
| Reference models | I.320–I.329 |
| Numbering, addressing and routing | I.330–I.339 |
| Connection types | I.340–I.349 |
| Performance objectives | I.350–I.359 |
| Protocol layer requirements | I.360–I.369 |
| General network requirements and functions | I.370–I.399 |
| ISDN USER-NETWORK INTERFACES | I.400–I.499 |
| Application of I-series Recommendations to ISDN user-network interfaces | I.420–I.429 |
| Layer 1 Recommendations | I.430–I.439 |
| Layer 2 Recommendations | I.440–I.449 |
| Layer 3 Recommendations | I.450–I.459 |
| Multiplexing, rate adaption and support of existing interfaces | I.460–I.469 |
| Aspects of ISDN affecting terminal requirements | I.470–I.499 |
| INTERNETWORK INTERFACES | I.500–I.599 |
| MAINTENANCE PRINCIPLES | I.600–I.699 |
| B-ISDN EQUIPMENT ASPECTS | I.700–I.799 |
| ATM equipment | I.730–I.749 |
| Management of ATM equipment | I.750–I.799 |

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

**ITU-T RECOMMENDATION I.259.1**

# SCREENING SUPPLEMENTARY SERVICES: ADDRESS SCREENING (ADS)


## Summary

Address Screening (ADS) is a supplementary service that can be provided in association to a data transfer service.

It provides restrictions on the user sending data units to certain destination users and/or the user receiving data units from certain source users.


## Source


ITU-T Recommendation I.259.1 was prepared by ITU-T Study Group 1 (1993-1996) and was approved under the WTSC Resolution N° 1 procedure on the 19th of July 1996.

## FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. Some 179 member countries, 84 telecom operating entities, 145 scientific and industrial organizations and 38 international organizations participate in ITU-T which is the body which sets world telecommunications standards (Recommendations).

The approval of Recommendations by the Members of ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, 1993). In addition, the World Telecommunication Standardization Conference (WTSC), which meets every four years, approves Recommendations submitted to it and establishes the study programme for the following period.

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.

## CONTENTS


| | | Page |
|---|---|---|
| 1 | Definition | 1 |
| 2 | Description | 1 |
| 2.1 | General description | 1 |
| 2.1.1 | DA screening of individually addressed data units | 1 |
| 2.1.2 | DA screening of group addressed data units | 1 |
| 2.1.3 | SA screening of data units | 1 |
| 2.2 | Specific terminology | 1 |
| 2.3 | Symbols and abbreviations | 2 |
| 2.4 | Qualification on the applicability to telecommunication services | 2 |
| 3 | Procedures | 2 |
| 3.1 | Provision/withdrawal | 2 |
| 3.2 | Normal procedures | 3 |
| 3.2.1 | Activation/deactivation/registration | 3 |
| 3.2.2 | Erasure | 3 |
| 3.2.3 | Invocation and operation | 3 |
| 3.3 | Exceptional procedures | 4 |
| 4 | Network capability for charging | 4 |
| 5 | Interworking requirements | 4 |
| 6 | Interaction with other supplementary services | 4 |
| 7 | SDL description | 5 |
| Annex A | | 6 |
| Appendix I - Illustrative figures for ADS | | 6 |

**Recommendation I.259.1**

# SCREENING SUPPLEMENTARY SERVICES: ADDRESS SCREENING (ADS)

*(Geneva, 1996)*

## 1 Definition

**address screening (ADS)** is a supplementary service that can be provided in association with a data transfer service.

It provides restrictions on the user sending data units to certain destination users and/or the user receiving data units from certain source users.

## 2 Description

### 2.1 General description

The ADS supplementary service ensures that a user cannot receive data units from certain users and that a user can send data units to certain users only.

ADS may be applied to both point-to-point data transfer (Individual Addresses IAs) and multicast communication (Group Addresses GAs).

The addresses shall be ISDN numbers. ISDN numbers are numbers conforming to the numbering plan and the structure specified in Recommendation E.164 [2].

There are different types of ADS:

a) Destination Address (DA) screening of individually addressed data unit.

b) DA screening of group addressed data unit.

c) Source Address (SA) screening of data unit.

#### 2.1.1 DA screening of individually addressed data units

A user identified by an individual address can/cannot send data units to destinations which are listed in a given set of only IAs.

#### 2.1.2 DA screening of group addressed data units

A user identified by an individual address can/cannot send data units to destinations which are listed in a given set of only GAs.

#### 2.1.3 SA screening of data units

A user identified by an individual address or a group address can/cannot receive data units from SAs listed in a given set of only IAs.

### 2.2 Specific terminology

For the purposes of this Recommendation, the following definitions apply.

**2.2.1 destination address**: It is either a particular UNI at the $T_B$ reference point, identified by an IA, which is the recipient of a point-to-point data transfer between two users; or a set identified by a

GA of geographically distinct UNIs at the $T_B$ reference point which are the recipients of a multicast communication.

**2.2.2 group address**: GA represents the set of IAs that identify the destinations of a multicast communication (Recommendation F.812 [1]). It can only be a DA. It is an ISDN number.

**2.2.3 group screen**: It is the set of exclusively GAs used for screening.

**2.2.4 individual address**: An IA identifies a particular source or destination UNI at the $T_B$ reference point of a point-to-point data transfer between users. It is an ISDN number.

**2.2.5 individual screen**: It is a set of exclusively IAs used for screening.

**2.2.6 source address**: It identifies a particular interface at the $T_B$ reference point which originates a point-to-point data transfer between two users. It is an IA.

### 2.3 Symbols and abbreviations

For the purposes of this Recommendation, the following abbreviations are used.

ADS Address Screening

B-ISDN Broadband Integrated Services Digital Network

CLAI Connectionless Access Interface

DA Destination Address

IA Individual Address

ISDN Integrated Services Digital Network

GA Group Address

SA Source Address

UNI User-Network Interface

### 2.4 Qualification on the applicability to telecommunication services

This ADS supplementary service applies to the BCDBS (see Recommendation F.812 [1]). It applies to both point-to-point and multicast communications supported by the service. It is offered at the CLAI (see Recommendation I.364 [3]).

## 3 Procedures

### 3.1 Provision/withdrawal

The ADS supplementary service (destination and source) is provided on a subscription basis. This subscription applies separately to each E.164 number which identifies a user. For each subscription, an individual and/or group screen is defined.

It is a subscription option to specify whether:

a) a screen acts positively (a match between the address received in the data unit and one of the addresses of the screen is required for acceptance/delivery); or

b) negatively (a mismatch is required for acceptance/delivery).

## 3.2 Normal procedures

### 3.2.1 Activation/deactivation/registration

Activation through subscription. On demand is for further study.

### 3.2.2 Erasure

Not applicable.

### 3.2.3 Invocation and operation

Invocation takes place implicitly when the user sends or receives a data unit over its UNI into or from the network.

The network shall carry out internal checks to determine whether or not the transfer of a data unit is allowed when it enters the network (from the source) and when it is ready to leave the network (towards the destination).

#### 3.2.3.1 Actions at the originating side

##### 3.2.3.1.1 DA screening of individually addressed data units

The network has the ability to check the DA of each data unit sent from the source user against an individual screen. This individual screen associated with the subscriber's SA shall consist of one and only one of the following:

– a list of "allowed individual DAs";

– a list of "disallowed individual DAs".

If the individual screen consists of "allowed DAs", and the DA of the data unit does not match one of these addresses, the data unit shall not be delivered.

If the individual screen consists of "allowed DAs", and the DA of the data unit does match one of these addresses, the data unit shall be further processed by the network.

If the individual screen consists of "disallowed DAs", and the DA of the data unit does match one of these addresses, the data unit shall not be delivered.

If the individual screen consists of "disallowed DAs", and the DA of the data unit does not match one of these addresses, the data unit shall be further processed by the network.

##### 3.2.3.1.2 DA screening of group addressed data units

The same procedure as in the above subclause is also maintained for GAs. In the case of user data units with a destination GA, the network shall perform the DA screening by checking the GA against the group screen of "allowed" or "disallowed" DAs.

#### 3.2.3.2 Actions at the destination side

##### 3.2.3.2.1 SA screening of individually and group addressed data units

The network has the ability to check the SA of the user data unit to be delivered against the individual screen associated to the DA of that data unit. This individual screen shall consist of one and only one of the following:

– a list of "allowed individual SAs"; or

– a list of "disallowed individual SAs".

If the individual screen consists of "allowed SAs", and the SA of the data unit does not match one of the screen addresses, the data unit shall not be delivered.

If the individual screen consists of "allowed SAs", and the SA of the data unit does match one of the screen addresses, the data unit shall be further processed.

If the individual screen consists of "disallowed SAs", and the SA of the data unit does match one of the screen addresses, the data unit shall not be delivered.

If the individual screen consists of "disallowed SAs", and the SA of the data unit does not match one of the screen addresses, the data unit shall be further processed.

In the case of group addressed data units, one or more of the UNIs associated with the IAs represented by the GA may have SA screening invoked, such that data units from the specific SA are not allowed to be delivered to these UNI(s). In such a case, a copy of the data unit is not delivered to these UNI(s) where screening is invoked. A copy of the group addressed data unit shall be delivered to each UNI represented by the GA where screening does not apply or determines that delivery is allowed.

#### 3.2.3.2.2 Multiple addresses and screens

If a subscriber specifies one individual screen and one group screen, then the individual screen must be used for SA screening of individual and group addressed data units and for DA screening of individually addressed data units, and the group screen must be used for DA screening of group addressed data units. If more than one ISDN number is assigned to the UNI of a subscriber, the subscriber can specify more than one individual screen and more than one group screen. If so, then:

a) Each IA assigned to the UNI must be associated with one individual screen: it is used for destination ADS of individually addressed data units sent from that UNI and having that address as SA, and is also used for SA screening of data units intended for delivery to that UNI and having that address as DA.

b) Each IA assigned to the UNI must be associated (if group addressing is applied) with one group screen, which is used for destination ADS of group addressed data units sent from that UNI and having that address as SA.

c) Each GA that identifies the UNI must be associated with one individual screen, which is used for SA screening of group addressed data units intended for delivery to that UNI and having that address as DA.

### 3.3 Exceptional procedures

For further study.

## 4 Network capability for charging

It shall be possible to charge the subscriber for this service. Charging principles are outside the scope of this Recommendation.

## 5 Interworking requirements

For further study.

## 6 Interaction with other supplementary services

For further study.

## 7 SDL description

The actions when a data unit is received in the network over a UNI or when the network is preparing to send a data unit across a UNI are described in Figure 1.

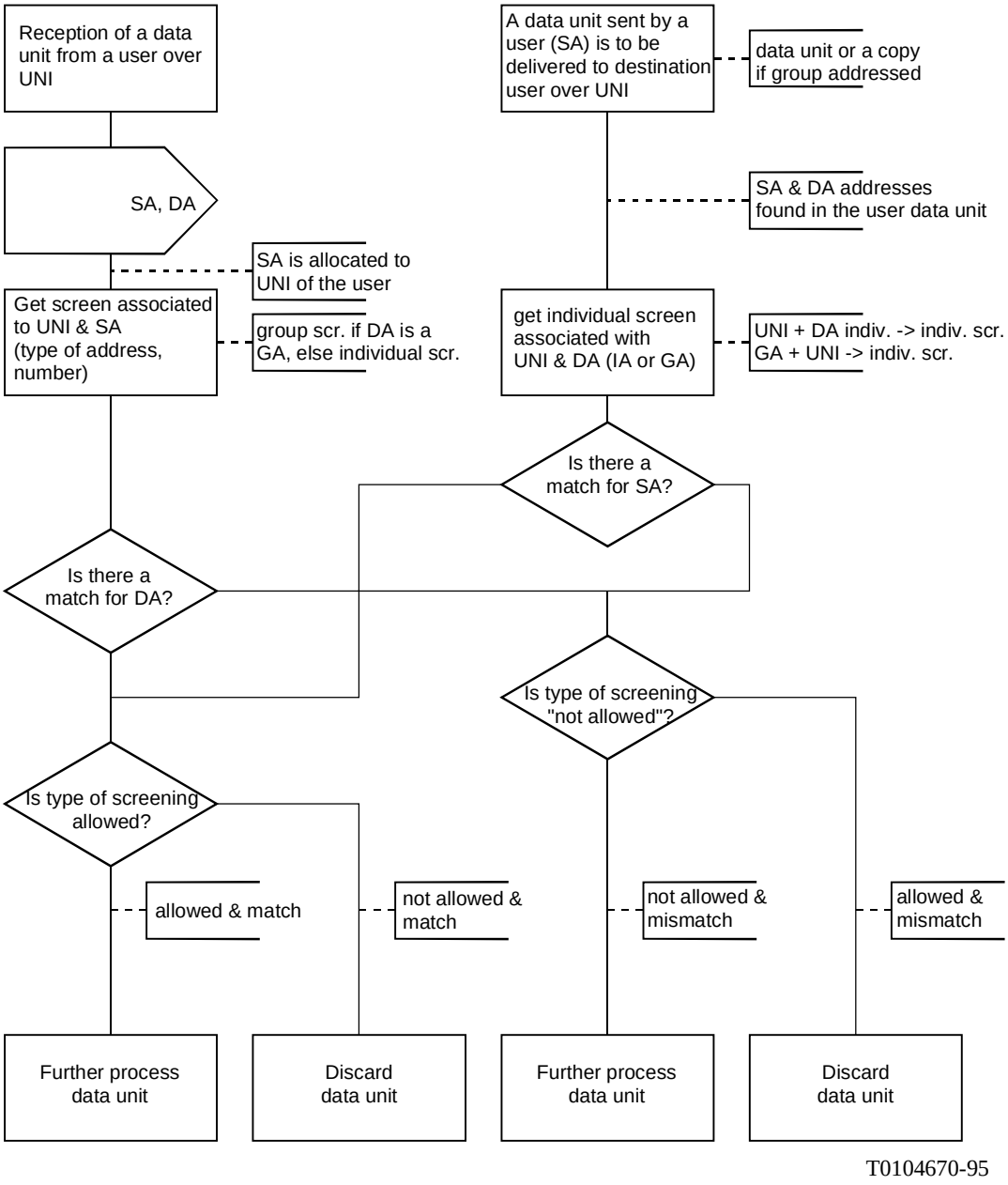



FIGURE 1/I.259.1

**SDL description of ADS**

## Annex A

(This annex forms an integral part of this Recommendation)

### References


[1] CCITT Recommendation F.812 (1992), *Broadband connectionless data bearer service.*

[2] CCITT Recommendation E.164 (1991), *Numbering plan for the ISDN era*.

[3] ITU-T Recommendation I.364 (1995*), Support of the broadband connectionless data bearer Service by the B-ISDN.*


## Appendix I

### Illustrative figures for ADS

(This appendix does not form an integral part of this Recommendation)

This appendix illustrates the ADS via figures. Figure I.1 illustrates DA screening. Figure I.2 illustrates SA screening.

The individual screen associated with an address X can be used for:

- destination screening of a point-to-point data unit sent by the subscriber with this address X as a source address;
- source screening of a point-to-point data unit sent to X;
- source screening of a multicast communication where the X is one of the individual addresses represented by the GA used for this multicast communication;
- the dotted arrows show associations of an address to the UNI and of addresses to screens. Pseudo-solid arrows represent the flow of the data unit. Solid arrows represent logical actions for ADS.

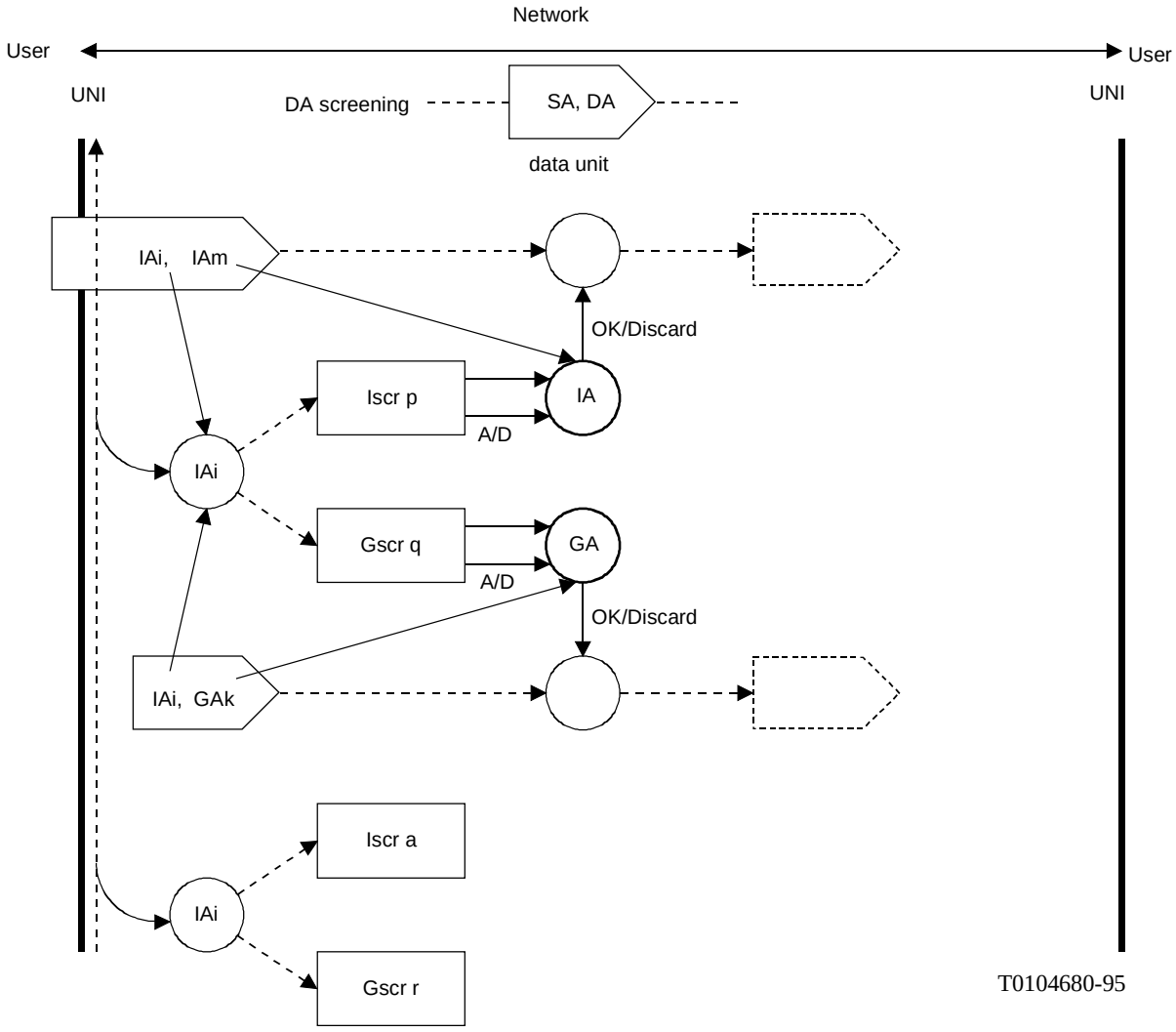
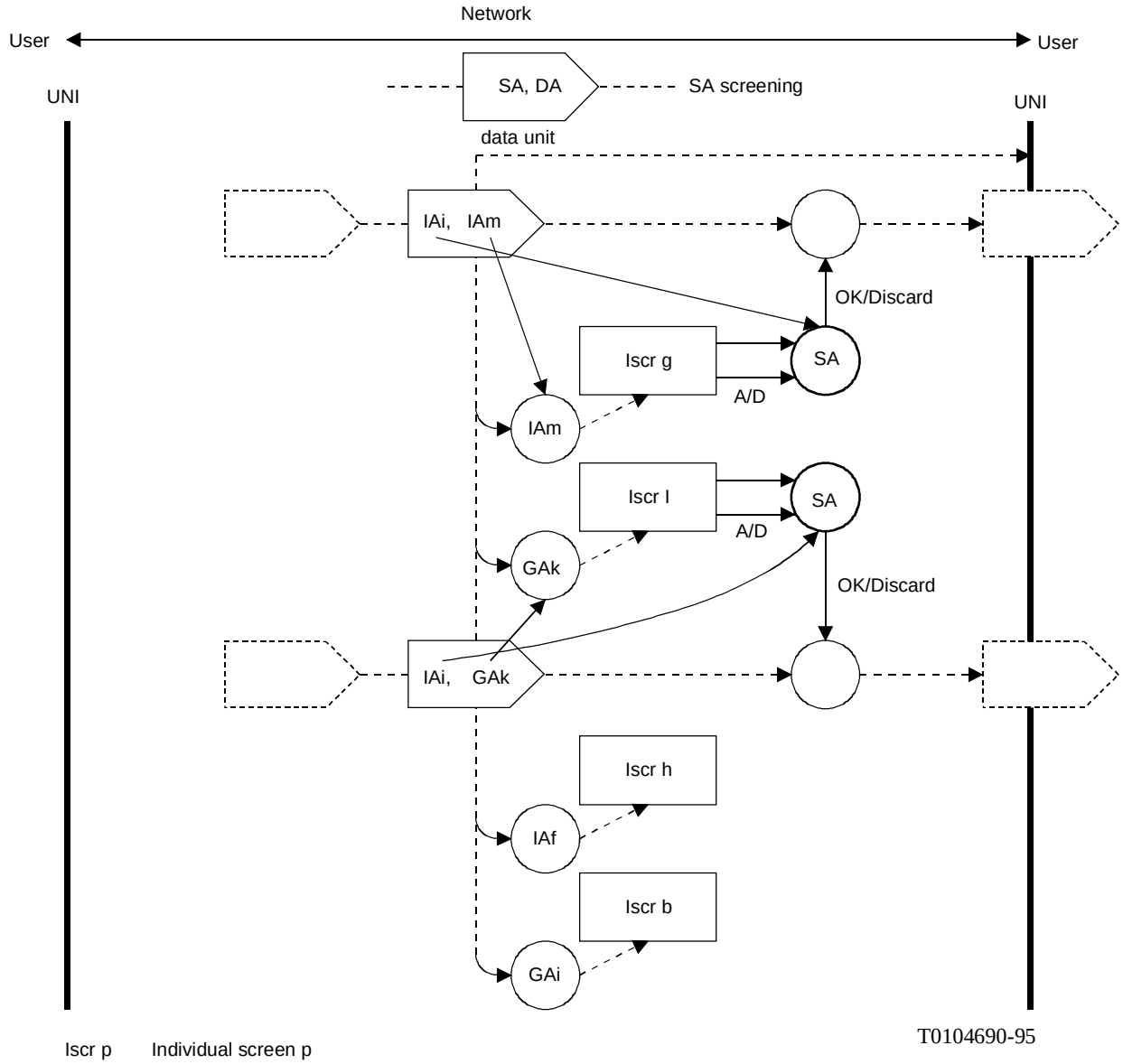



FIGURE I.1/I.259.1

**DA screening**




| | |
|---|---|
| Iscr p | Individual screen p |
| Gscr q | Group screen q |
| GAk | Group Address k |
| IAm | Individual Address m |
| A/D | allowed/not allowed |
| DA | Destination Address |
| SA | Source Address |

FIGURE I.2/I.259.1

**SA screening**

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