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**Digital cellular telecommunications system (Phase 2+) (GSM);  
Universal Mobile Telecommunications System (UMTS);  
LTE;  
Telecommunication management;  
Security services for Integration Reference Point (IRP);  
Information Service (IS)  
(3GPP TS 32.372 version 14.0.0 Release 14)**



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# Introduction

The present document is part of a TS-family covering the 3<sup>rd</sup> Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; as identified below:

32.371: "Security Management concept and requirements".

**32.372: "Security services for Integration Reference Points (IRP); Information Service (IS)".**

32.376: "Security services for Integration Reference Point (IRP); Solution Set (SS) definitions".

In 3GPP SA5 context, IRPs are introduced to address process interfaces at the Itf-N interface. The Itf-N interface is built up by a number of Integration Reference Points (IRPs) and a related Name Convention, which realise the functional capabilities over this interface. The basic structure of the IRPs is defined in 3GPP TS 32.101 [1] and 3GPP TS 32.102 [2]. An IRP consists of IRPManager and IRPAgent. Usually there are three types of transaction between IRPManager and IRPAgent, which are operation invocation, notification, and file transfer.

However, there are different types of intentional threats against the transaction between IRPManagers and IRPAgents. All the threats are potential risks of damage or degradation of telecommunication services, which operators should take measures to reduce or eliminate to secure the telecommunication service, network, and data.

By introducing Security Management, the present document describes security mechanisms to relieve the threats between IRPManagers and IRPAgents.

As described in 3GPP TS 32.101 [1], the architecture of Security Management is divided into two layers:

Layer A - Application Layer.

Layer B - O&M IP Network.

The threats and Security Management requirements of different layers are different, which should be taken into account respectively.

3GPP defines three types of IRP specifications, (see 3GPP TS 32.102 [2]). One type relates to the definitions of the interface deployed across the Itf-N. These definitions need to be agreed between the IRPManagers and IRPAgents so that meaningful communication can occur between them. An example of this type is the Alarm IRP.

The other two types (NRM IRP and Data Definition IRP) relate to the network resource model (schema) of the managed network. This network schema needs to be agreed between the IRPManagers and IRPAgents so that the IRPAgent can provide network management services to the IRPManager. An example of this type is the UTRAN NRM IRP.

This Information Service specification is applicable to the Interface IRP specifications. That is to say, it is concerned only with the security aspects of operations/notifications/files deployed across the Itf-N.

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# 1 Scope

The purpose of the present document is to specify the necessary security features, services and functions to protect the network management data, including Requests, Responses, Notifications and Files, exchanged across the Itf-N.

The present document specifies the Security Service for IRP Information Service.

This Security Service for IRP IS defines the semantics of management information visible across the Itf-N in a protocol and technology neutral way. It does not define the syntax or encoding of the operations and their parameters.

This Information Service specification is related to 3GPP TS 32.371 [6].

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# 2 References

The following documents contain provisions that, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document in the same Release as the present document.

- [1] 3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".
- [2] 3GPP TS 32.102: "Telecommunication management; Architecture".
- [3] ITU-T Recommendation M.3016 (1998): "TMN security overview".
- [4] 3GPP TS 33.102: "3G security; Security architecture".
- [5] ITU-T Recommendation X.800: "Security Architecture for OSI for CCITT Applications".
- [6] 3GPP TS 32.371: "Telecommunication management; Security Management concept and requirements".
- [7] 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".
- [8] 3GPP TS 32.373: "Telecommunication management; Security Service for Integration Reference Point (IRP):Common Object Request Broker Architecture (CORBA) Solution".

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# 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

**IRP:** See 3GPP TS 32.101 [1].

**IRPAgent:** See 3GPP TS 32.102 [2].

**IRPManager:** See 3GPP TS 32.102 [2].

**Operations System (OS):** indicates a generic management system, independent of its location level within the management hierarchy