SLOVENSKI STANDARD
SIST EN 301 931-3 V1.1.2:2005

01-januar-2005

Inteligentno omrežje (IN) – Tretji nabor zmožnosti inteligentnega omrežja (CS3) – Aplikacijski protokol inteligentnega omrežja (INAP) – Specifikacija protokola – 3. del: Vmesnik SCF-SRF

Intelligent Network (IN); Intelligent Network Capability Set 3 (CS3); Intelligent Network Application Protocol (INAP); Protocol specification; Part 3: SCF-SRF interface

Ta slovenski standard je istoveten z: EN 301 931-3 Version 1.1.2

ICS:

33.040.40	Podatkovna komunikacijska omrežja	Data communication networks

SIST EN 301 931-3 V1.1.2:2005 **en**

ETSI EN 301 931-3 V1.1.2 (2001-09)

European Standard (Telecommunications series)

Intelligent Network (IN);
Intelligent Network Capability Set 3 (CS3);
Intelligent Network Application Protocol (INAP);
Protocol specification;
Part 3: SCF-SRF interface

Reference
DEN/SPAN-03063/1-3

Keywords
CS3, CTM, IN, INAP, protocol, UPT

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Sous-Préfecture de Grasse (06) N° 7803/88

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

The present document is part 3 of a multi-part deliverable covering Intelligent Network (IN); Intelligent Network Application Protocol (INAP); Capability Set 3 (CS3); Protocol specification, as identified below:

Part 1: "Common aspects";

Part 2: "SCF-SSF interface";

Part 3: "SCF-SRF interface";

Part 4: "SDLs for SCF-SSF interface".

The present document and parts 1, 2 and 4 define the Intelligent Network (IN) Application Protocol (INAP) for IN Capability Set 3 (IN CS-3). The present document and parts 1, 2 and 4 define the INAP for IN CS-3 based upon ETSI Core INAP CS-2 (EN 301 140-1) and ITU-T IN CS3 Recommendation Q.1238 (1999).

The structure of the present document and parts 1, 2 and 4 follows the ITU-T Recommendation Q.1238 rather than that usual for an ETSI deliverable.

National transposition dates	
Date of adoption of this EN:	31 August 2001
Date of latest announcement of this EN (doa):	30 November 2001
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 May 2002
Date of withdrawal of any conflicting National Standard (dow):	31 May 2002

1 Scope

The present document is part 3 of a multi-part deliverable for IN CS-3. The part 3 covers the SCF-SRF interface including the description of the aspects of the Functional Entities SRF and SCF which are relevant to this interface.

2 References

All documents referred to in the present document are identified in EN 301 931-1.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in EN 301 931-1 apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations and acronyms given in EN 301 931-1 apply.

4 Relationships

4.1 SRF-CCF relationship

At present, it is considered that the CCF is under control of the SSF: a SRF-SSF/CCF relationship exists for connection control to specialized resources.

The relationship between the SRF and the CCF is not defined (e.g. in the case of releasing a connection on which a resource is used). The SRF may contain functionality similar to the CCF to manage bearer connections to specialized resources, but no call model is specified.

4.2 SCF-SRF relationship

This SCF-SRF relationship is used when the SCF sends instructions to the SRF.

The SCF-SRF relationship could be a direct link or established via a relay through the SSF.

In some cases, this SCF-SRF relationship is used when the SCF delegates some of the service logic to the SRF, which executes a specialized type of service logic, known as *User Interaction-scripts*. This can avoid long response times, which are unavoidable if functions are physically distributed over two networks nodes, the SCP and the IP.

In assisting scenarios the SRF establishes the relationship towards the SCF.

5 SCF FE Model

The prime function of the Service Control Function (SCF) is the execution of service logic. Service logics interfaces and interacts with the Service Switching and Call Control Function for establishing End User Interaction to send and receive information. Specialized resources used in the context of End user interaction are managed by the Specialized Resource Function (SRF) and controlled by the Service Control functionality.

6 SRF FE Model

This clause describes the various components found within an SRF. It is noted that this shows a conceptual model of SRF and is not intended to imply an actual implementation of the SRF.

Main SRF components are:

a) Functional Entity Access Manager (FEAM);

b) SRF Resource Manager (RM);

c) Resources.

The SRF Resource Manager is contained in a block called Resource Control Part along with the Resource Logic Library and the Resource Logic Instances; it is possible to split the Resources in the following blocks:

a) Resource Function Part (RFP);

b) Data Part (DP).

Enhancements of the SRF components are described in the following clauses and in figure 1.

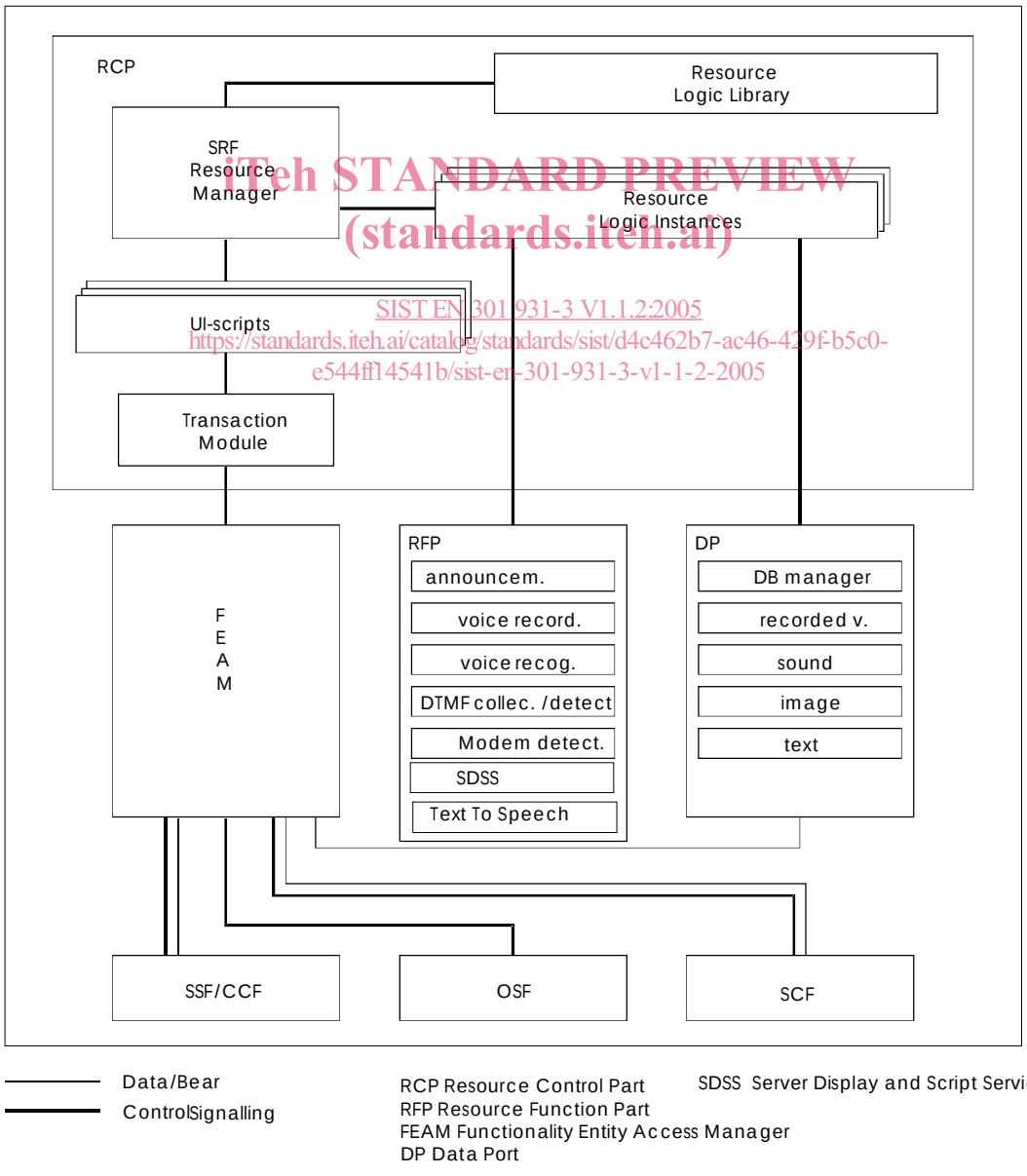

Figure 1: SRF FE Model

6.1 Resource Control Part (RCP)

The RCP contains SRF service logic, and controls the service procedure using the capabilities of other blocks. To offer a specialized resource, RCP uses resource-function pair in the RFP and data in the DP.

Whenever RCP receives a call requesting a specialized resource-function pair, it invokes the internal resource controller, which manages the first needed resource function pair to make a decision of admission or rejection of the call. The SRF sends ACK or NACK messages according to the decision by the resource controller.

There are as many controllers as there are special resource function types. The controllers accept or reject calls requesting a resource-function pair on the basis of characteristic parameters. A controller consists of an interface unit and a decision unit. First one encodes and decodes messages from/to the FEAM, and makes the input patterns for the decision unit; the characteristic parameter permitting the acceptation or rejection of the call controlled by an algorithm within the decision unit, and is based on the parameters from the interface unit.

6.1.1 SRF Resource Manager

The RM provides the functionality which is necessary for the SRF to manage the resources contained in it. The RM contains the capabilities to search for a resource, to allocate or de-allocate it, to manage the status of a resource, and to control its actions.

6.1.2 Transaction Module

The Transaction Module provides the functionality necessary for:

- detection of transactions from the communication links;
- routing of transactions to the right applications scripts.

6.1.3 User Interaction-scripts (UI-Script)

It provides to the SCF a vision of the different specialized resources functions that the SRF can perform. A User Interaction-script is an aggregation of Resource Function.

6.1.4 Resource Logic Library

It indicates the SRF Logic and Physic Resources that are necessary for a given User Interaction-script.

6.1.5 Resource Logic Instances

It instances the SRF resources that are necessary for the correct execution of the invoked specialized resource.

6.2 Resource Function Part (RFP)

The RFP is a collection of resource-function pairs or functional elements of resources. Resources in a resource-function pair for a service procedure, are allocated and released together.

6.3 Data Part (DP)

The DP is composed of a database manager and a database containing recorded voice, sound, image, text, etc.

7 SRF application entity procedures

As described in EN 301 931-1, the SRF-FSM handles interactions with the SSF FSM and the SCF FSM entity. The SRME-control interfaces to the various SRF call state models (SRSM) and the functional entity access manager (FEAM). The SRF-FSM structure is described in figure 2. The FEAM is described in EN 301 931-1.

General tasks of the SRME control is defined in EN 301 931-1. In addition to the general tasks, the SRME-control checks the existence of a SCF-SRF relationship by receiving an Activitytest operation from the SCF and returns the result to the SCF.

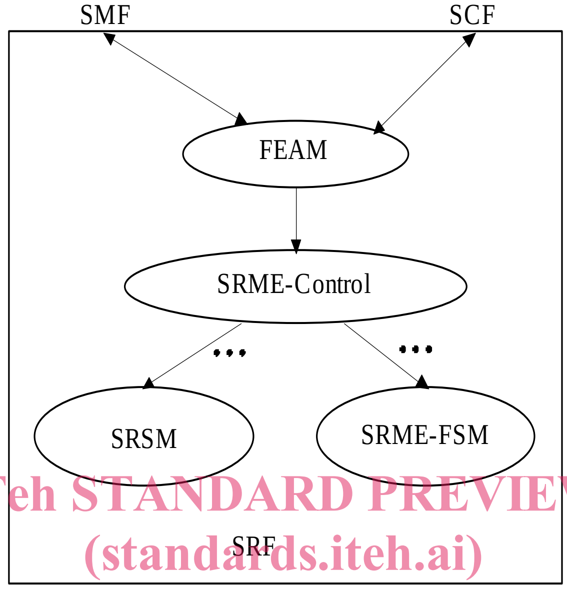

Figure 2: SRF FSM Structure

In the following clauses the SRSM and SRME-FSM are described.

7.1 The SRF management finite state model (SRME FSM)

The SRME handles the following operation:

- sRFCallGap.

The sRFCallGap operation is issued within a context of an existing relationship and doesn't cause state transitions in the SRME.

All other operations have no effect on the SRME-FSMs; the operations are passed by the SRME-Control to the relevant FSM.