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Foreword

This European Telecommunication Standard (ETS) has been produced by the Terrestrial Trunked Radio (TETRA) Project of the European Telecommunications Standards Institute (ETSI).

This ETS is a multi-part standard and will consist of the following parts:

- Part 1: "General network design";
- Part 2: "Air Interface (AI)";
- Part 3: "Interworking at the Inter-System Interface (ISI)";
- Part 4: "Gateways basic operation";
- Part 5: "Peripheral Equipment Interface (PEI)";
- Part 6: "Line connected Stations (LS)";
- Part 7: "Security";
- Part 9: "General requirements for supplementary services";
- Part 10: "Supplementary services stage 1";**
- Part 11: "Supplementary services stage 2";
- Part 12: "Supplementary services stage 3";
- Part 13: "SDL model of the Air Interface (AI)";
- Part 14: "Protocol Implementation Conformance Statement (PICS) proforma specification".

Transposition dates	
Date of adoption of this ETS:	2 July 1999
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1 Scope

This ETS defines the stage 1 description of the Talking Party Identification (TPI) supplementary service for the Terrestrial Trunked Radio (TETRA) as provided by European operators. The stage 1 description is an overall service description from the users point of view but does not deal with the details of the human interface itself (see CCITT Recommendation I.130 [1]).

This ETS specifies the service description of the supplementary service and the procedures to be expected with successful and unsuccessful outcomes. In addition the ETS specifies the interactions with other TETRA supplementary services and inter-working considerations.

Charging principles are outside the scope of this ETS.

The TPI supplementary service enables parties in a call to receive the identification of the talking party.

2 References

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] CCITT Recommendation I.130: "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [2] ITU-T Recommendation Z.100: "CCITT Specification and Description Language (SDL)".
- [3] ITU-T Recommendation I.112: "Vocabulary of terms for ISDNs".
- [4] ITU-T Recommendation I.210: "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [5] ITU-T Recommendation Q.9: "Vocabulary of switching and signalling terms".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the following definitions apply:

authorized user: user who may activate or deactivate the supplementary service, and/or define mnemonic names and/or place interrogations to know another user's activation state and either his mnemonic name or his identity

basic (...) service: any stand alone bearer service or teleservice (derived from ITU-T Recommendation I.210 [4])

bearer service: type of telecommunication service that provides the capability for the transmission of signals between user-network interfaces (defined in ITU-T Recommendation I.112 [3])

listening/receiving parties: participants in a call who are not transmitting

Mobile Station (MS): physical grouping that contains all of the mobile equipment that is used to obtain TETRA services. By definition, a mobile station contains at least one Mobile Radio Stack (MRS)

served user: user who is provided with SS-TPI when he is listening/receiving during a call

Supplementary Service (SS): any service provided by a network in addition to its basic service or services (defined in ITU-T Recommendation Q.9 [5]). A supplementary service modifies or supplements a basic telecommunication service. Consequently, it cannot be offered to a customer as a stand alone service. It must be offered together with or in association with a basic telecommunication service (except from ITU-T Recommendation I.210 [4])

switching and management infrastructure: all of the TETRA equipment for a Voice plus Data (V+D) network. The SwMI enables subscriber terminals to communicate with each other via the SwMI

Talking/sending party: member of the call who has been given permission to transmit

teleservice: type of telecommunications service that provides the complete capability, including terminal equipment functions, for communication between users according to agreed protocols (defined in ITU-T Recommendation I.112 [3] except for a minor change at the end)

3.2 Abbreviations

3.2.1 General abbreviations

For the purposes of this ETS, the following general abbreviations apply:

GTSI	Group TETRA Subscriber Identity
ISDN	Integrated Services Digital Network
ITSI	Individual TETRA Subscriber Identity
LS	Line Station
MRS	Mobile Radio Stack
MS	Mobile Station
SDL	(Functional) Specification and Description Language
SS	Supplementary Service

NOTE: The abbreviation SS is only used when referring to a specific supplementary service.

SwMI	Switching and Management Infrastructure
TETRA	Trans-European Trunked RAdio
V+D	Voice Plus Data

3.2.2 Supplementary service abbreviations

For the purposes of this ETS, the following Supplementary service abbreviations apply:

CLIP	Calling Line Identification Presentation
CLIR	Calling/Connected Line Identification Restriction
TPI	Talking Party Identification

All other supplementary services abbreviations to be listed here (see subclause 4.3).

AL	Ambience Listening
AoC	Advice Of Charge (supplementary service)
AS	Area Selection
AP	Access Priority
BIC	Barring of Incoming Calls
BOC	Barring of Outgoing Calls
CAD	Call Authorized by Dispatcher
CCBS	Call Completion to Busy Subscriber
CCNR	Call Completion on No Reply
CFB	Call Forwarding on Busy
CFNRy	Call Forwarding on No Reply
CFU	Call Forwarding unconditional
COLP	COConnected Line identification Presentation (supplementary service)
CRT	Call ReTention
CW	Call Waiting
DGNA	Dynamic Group Number Assignment

DL	Discreet Listening
IC	Include Call
LE	Late Entry
LSC	List Search Call
PC	Priority Call
PPC	Pre-emptive Priority Call
SNA	Short Number Addressing
TC	Transfer of Control

4 SS-TPI stage 1 description

4.1 Description

4.1.1 General description

Talking Party Identification (TPI) enables the parties to be made aware of the identity of the talking/sending party. Optionally, the talking party mnemonic name may be delivered and/or the priority level of the talking/sending party requests for transmission permission grant.

4.1.2 Qualifications on applicability to telecommunication services

This supplementary service shall be applicable to all TETRA circuit mode teleservices and bearer services.

4.2 Procedures

4.2.1 Provision/Withdrawal

SS-TPI is available to all TETRA users with the ability to receive this information.

Subscription shall be on a TETRA number (Individual TETRA Subscriber Identity (ITSI)/Group TETRA Subscriber Identity (GTSI)) basis. For each ITSI/GTSI, the supplementary service may be subscribed to for every applicable service subscribed to, or for only some.

SS-TPI may be provided with the subscription options defined in table 1.

Table 1: SS-TPI subscription parameters

Subscription parameter	Value
Delivery of talking/sending party's mnemonic name.	-Yes - No
Delivery of priority levels of talking/sending party's requests for transmission permission grant.	- Yes - No

4.2.2 Normal procedures

4.2.2.1 Activation/Deactivation, definition, registration, interrogation and cancellation

4.2.2.1.1 Activation/Deactivation

SS-TPI may be activated for an ITSI or a GTSI upon provision for speech and/or for data services. If activated, it shall be deactivated upon withdrawal.

As an implementation option the authorized user may activate and/or deactivate the supplementary service also for an ITSI or a GTSI for telephony teleservices and/or for data bearer services.

4.2.2.1.2 Definition

The mnemonic name may be assigned to an ITSI. They shall not exceed 15 characters. It should be possible to define mnemonic names with more than one character set.

As an implementation option, the authorized user may define such mnemonic names.

4.2.2.1.3 Registration

The authorized user shall be registered upon subscription. There is no interface protocol defined for that purpose.

4.2.2.1.4 Interrogation

As an implementation option, the authorized user may interrogate the infrastructure to know another user's activation state and either his mnemonic name or his identity.

A SwMI may support such interrogation on a per TETRA identity basis for:

- the service activation state; and
- if the TETRA identity is an ITSI, the associated mnemonic name.

A SwMI may also support such interrogation on a per mnemonic name basis for:

- the corresponding ITSI; and
- the service activation state.

The served user may be granted limited authorized user capabilities, e.g. to know SS-TPI activation state for him, or his mnemonic name.

4.2.2.1.5 Cancellation

Shall not be applicable.

4.2.2.2 Invocation and operation

In a group call, each participant may be granted transmission permission, automatically at call set-up, or upon request during the call. Included in the request is the identification of the participant. If the service is activated against a GTSI the service shall be invoked when the call is set-up. The infrastructure shall then operate the service in delivering to all listening parties the talking/sending party's ITSI every time that it grants to a new talking/sending party permission to transmit. An MS/LS supporting the service shall receive that identification. Depending on the subscription options (see table 1), the mnemonic name of the talking/sending party and/or the priority level of his request for transmission permission grant may also be delivered together with his identity.

If SS-TPI is activated against a user's ITSI, the same shall apply every time that user is the listening/receiving user in a half-duplex individual call or when that user participates in a duplex individual call.

NOTE: If SS-TPI is activated against a user's ITSI and the user has joined a multipoint call, he will not receive the identifications of the talking parties unless SS-TPI has been activated against the GTSI of the ongoing multipoint call. In other words activation against an ITSI will only apply for individual calls.

If SS-TPI is activated against both the calling user and the connected user ITSIs, it shall be invoked and operated independently for each.

4.2.3 Exceptional procedures

4.2.3.1 Activation/deactivation, definition, registration, interrogation and interrogation

4.2.3.1.1 Activation/deactivation

If the infrastructure cannot accept an activation request it shall provide a rejection reason to the authorized user. Possible causes for rejection are e.g.:

- service not supported;
- activation/deactivation not supported;
- invalid GTSI or ITSI;
- unauthorized user;
- service not subscribed to.

4.2.3.1.2 Definition

If the infrastructure cannot accept a definition request it shall provide a rejection reason to the authorized user. Possible causes for rejection are e.g.:

- service not supported;
- definition not supported;
- invalid ITSI (there is no definition procedure for a GTSI);
- unauthorized user;
- character set for the definition of the mnemonic name not supported;
- length of the definition of the mnemonic name larger than that necessary for defining fifteen characters taking into account the character set chosen.

4.2.3.1.3 Registration

Shall not be applicable.

4.2.3.1.4 Interrogation

If the infrastructure cannot accept an interrogation request, it shall provide a rejection reason to the authorized user. Possible causes for rejection are e.g.:

- service not supported;
- interrogation not supported;
- invalid GTSI or ITSI if the interrogation has been made on a per identity basis;
- unknown or invalid mnemonic name if the interrogation has been made on a per mnemonic name basis;
- unauthorized user.

4.2.3.1.5 Cancellation

Shall not be applicable.

4.2.3.2 Invocation and operation

In cases where the option delivery of mnemonic name of the talking/sending party has been subscribed and where such delivery cannot be ensured because the talking/sending party's name is unavailable, the listening/receiving user(s) shall be informed about that.

4.3 Interactions with other supplementary services

4.3.1 Calling line identification presentation (SS-CLIP)

When both SS-TPI and SS-CLIP have been activated and when the calling user is the talking/sending user at set-up time, SS-TPI and SS-CLIP (operations) shall interact so that the calling/talking/sending party identity shall be sent only once to the connected user(s) at set-up time.

NOTE: No interaction is specified for SS-TPI and SS-CLIP operations at set-up time when still in the same situation (both SS-TPI and SS-CLIP activated and the calling user being the talking/sending user at set-up time), in addition, SS-CLIR has been invoked for the calling user i.e. the information that SS-CLIR has been invoked for the calling user is delivered independently by both SS-TPI and SS-CLIP operations at set-up time.

Doing otherwise would have resulted in unnecessarily complicating the protocol.

4.3.2 Connected line identification presentation (SS-COLP)

When both SS-TPI and SS-COLP have been activated and when the connected user in an individual call is the talking/sending user at set-up time, SS-TPI and SS-COLP (operations) shall interact so that the connected/talking/sending party identity shall be sent only once.

NOTE 1: No interaction is specified for SS-TPI and SS-COLP operations at set-up time when still in the same situation (both SS-TPI and SS-CLIP activated and the calling user being the talking/sending user at set-up time in an individual call), in addition, SS-CLIR has been invoked for the connected user i.e. the information that SS-CLIR has been invoked for the connected user is delivered independently by both SS-TPI and SS-COLP operations at set-up time.

Doing otherwise would have resulted in unnecessarily complicating the protocol.

NOTE 2: In the case of a group call, there cannot be any interaction between SS-TPI and SS-COLP since the SS-COLP information (sent to the calling user at set-up time) is the group identity.

4.3.3 Calling/Connected line identification restriction (SS-CLIR)

In the case where SS-CLIR has been invoked for the talking party then that supplementary service shall take precedence over SS-TPI and neither the identity of the talking party nor his mnemonic name shall be given to the other party/parties in the call. However the information that SS-CLIR has been invoked for the talking party shall be delivered as an SS-TPI information.

SS-CLIR may be overridden if a SS-TPI served user has been given the corresponding privilege, but this is outside the scope of this ETS.

4.3.4 Call report

Not applicable.

4.3.5 Call forwarding unconditional (SS-CFU)

When transmission permission is granted to a user connected through SS-CFU in an individual call, the SS-TPI information delivered to the calling user shall relate to that connected user.

When SS-CFU applies to a group, the SS-TPI activation state shall be that of the forwarded to group.

NOTE: SS-CFU does not apply for participants in a group call.

4.3.6 Call forwarding on busy (SS-CFB)

When transmission permission is granted to a user connected through SS-CFB in an individual call, the SS-TPI information delivered to the calling user shall relate to that connected user.

When SS-CFB applies to a group, the SS-TPI activation state shall be that of the forwarded to group.

NOTE: SS-CFB does not apply for participants in a group call.

4.3.7 Call forwarding on no reply (SS-CFNRY)

When transmission permission is granted to a user connected through SS-CFNRY in an individual call, the SS-TPI information delivered to the calling user shall relate to that connected user.

NOTE: SS-CFNRY does not apply for a group.

4.3.8 Call forwarding on not reachable (SS-CFNRC)

When transmission permission is granted to a user connected through SS-CFNRC in an individual call, the SS-TPI information delivered to the calling user shall relate to that connected user.

When SS-CFNRC applies to a group, the SS-TPI activation state shall be that of the forwarded to group.

NOTE: SS-CFNRC does not apply for participants in a group call.

4.3.9 List search call (SS-LSC)

When transmission permission is granted to a user connected through SS-LSC in an individual call, the SS-TPI information delivered to the calling user shall relate to that connected user.

When SS-LSC applies to a group, the SS-TPI activation state shall be that of the group selected through SS-LSC.

NOTE: SS-LSC does not apply for participants in a group call.

4.3.10 Call authorized by dispatcher

When a call has been diverted to a dispatcher, SS-TPI shall be operated for the calling user and for the dispatcher for the duration of that diverted call, as activated for the calling user and for that dispatcher. After the dispatcher has authorized the call initially requested, in transferring its existing call with the calling user, SS-TPI shall continue being operated for the calling user as during the diverted call with the dispatcher. If the dispatcher was the talking party when the call is transferred, the infrastructure shall send to the calling user the SS-TPI information related to the connected user when the call with the latter is established.

NOTE: According to the specification of SS-CAD, the calling party will remain the listening/receiving party if it was already that at the end of its call with the dispatcher.

SS-CAD shall have no interaction with the invocation and operation of SS-TPI for the connected user.

4.3.11 Short number addressing (SS-SNA)

Not applicable.

4.3.12 Area selection (SS-AS)

Not applicable.

4.3.13 Access priority (SS-AP)

Not applicable.

4.3.14 Priority call (SS-PC)

Not applicable.

4.3.15 Call waiting (SS-CW)

Not applicable.

4.3.16 Call hold (SS-Hold)

Not applicable.

4.3.17 Call completion to busy subscriber (SS-CCBS)

Not applicable.

4.3.18 Late entry (SS-LE)

Not applicable.

4.3.19 Transfer of control (SS-TC)

Not applicable.

4.3.20 Pre-emptive priority call (SS-PPC)

Not applicable.

4.3.21 Include call (SS-IC)

Talking party identification shall not have any interaction with include call.

4.3.22 Advice of charge (SS-AoC)

Not applicable.

4.3.23 Barring of outgoing calls (SS-BOC)

Not applicable.

4.3.24 Barring of incoming calls (SS-BIC)

Not applicable.

4.3.25 Discreet listening (SS-DL)

Talking party identification shall not have any interaction with discreet listening.

4.3.26 Ambience listening (SS-AL)

Talking party identification shall not have any interaction with ambience listening.

4.3.27 Dynamic group number assignment (SS-DGNA)

Not applicable.

4.3.28 Call completion on no reply (SS-CCNR)

Not applicable.

4.3.29 Call retention (SS-CRT)

Not applicable.

4.4 Interworking considerations

When a call with an external user, i.e. a user in a non TETRA network, has been set-up and no identification number for that user has been provided by the other network, when that user is the talking party, the TETRA user(s) participating in the call shall be given the (SS-TPI) indication that the number is unavailable due to interworking.

When a call with an external user has been set-up with the information that SS-CLIR has been invoked for the external user being delivered by the non TETRA network, when that external user is the talking party the only SS-TPI information delivered TETRA user(s) participating in the call shall be that SS-CLIR has been invoked for the external user (i.e. even if his number or his name are known, they shall not be given to the TETRA user(s) participating in the call).

4.5 Overall SDL

Figure 1 contains the dynamic description of SS-TPI using the Specification Description Language (SDL) defined in ITU-T Recommendation Z.100 [2]. The SDL process represents the behaviour of the network in invoking and operating SS-TPI.

Process TPI_stage1

1(2)

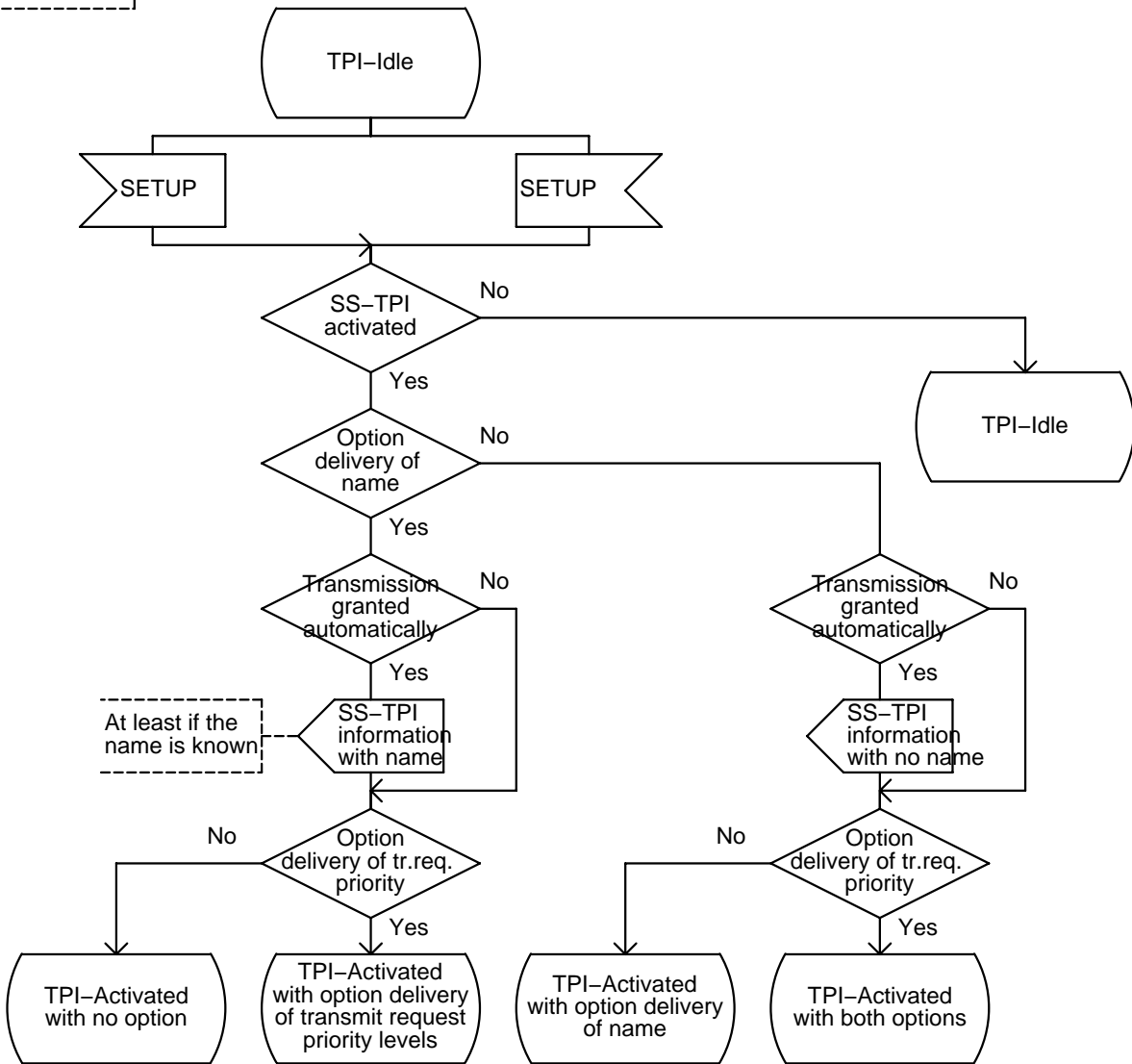


Figure 1 (sheet 1 of 2): SS-TPI, Overall SDL

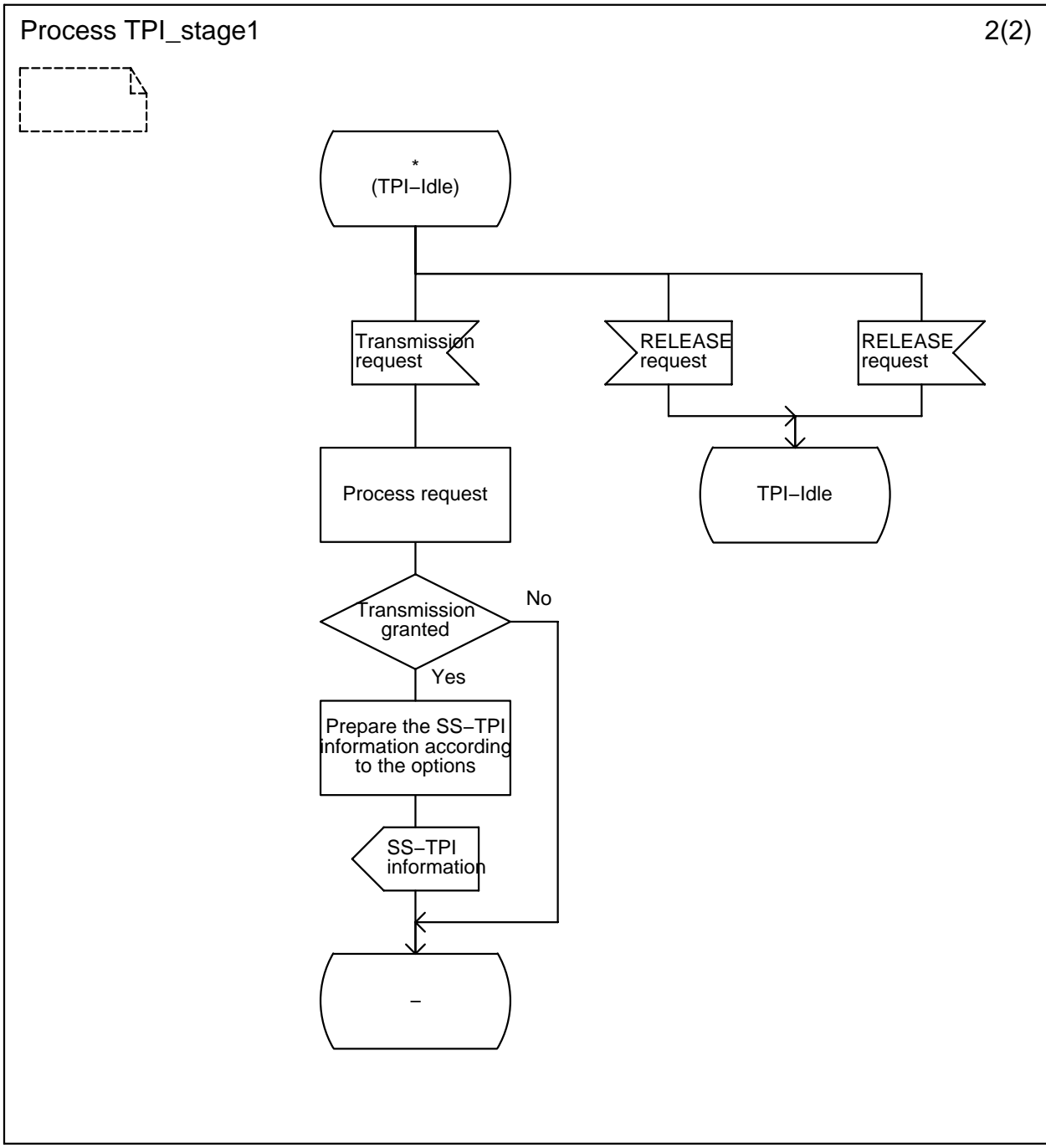


Figure 1 (sheet 2 of 2): SS-TPI, Overall SDL

History

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April 1996	First Edition		
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