The isup-oli SIP URI Parameter
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A SIP URI parameter "isup-oli" is being used for interworking the ISUP Originating Line Information parameter or equivalent PSTN signaling information with SIP. This parameter has been also been discussed in various documentation, but nowhere is it formally documented. This document formally documents the usage, syntax, and semantics of this parameter, providing a reference for discussion of this parameter. It does not seek to achieve standardization of this parameter.
digits. In either case the parameter carries a two-digit value; a few examples include 07- "Special Operator Handling Required", 29- "prison/inmate service", 34- "Telco Operator Handled Call"..

The isup-oli SIP URI parameter is being used for interworking the OLI information between PSTN signaling and SIP at a gateway. There is currently no formal documentation of this parameter. This document intends to provide a description of the parameter. It does not aim to achieve standardization of this parameter. It describes the formal syntax, usage, and semantics of the parameter as currently implemented.

2. Usage

PSTN gateways are used to interwork between PSTN signaling and SIP [RFC3261]. In North America, ANSI ISUP and various flavors of MF signaling are the most commonly used PSTN signaling protocols.

The Originating Line Information conveys information describing the class of service for a call, which effectively characterizes the originator. It is signaled in ANSI ISUP using the OLI parameter, and in MF it is signaled in the ANI II digits. In either case, the information is conveyed using a two digit value.

The OLI information from the PSTN signaling is mapped to the isup-oli SIP URI parameter. Since the PSTN OLI provides information about the originating line, the isup-oli SIP URI parameter is also used to describe the originator; e.g., in the From header of the INVITE.

For interworking from ISUP to SIP, if the incoming IAM contains an OLI parameter, and if the gateway populates the From header of the corresponding SIP INVITE message with a SIP URI based on the ISUP Calling Party Number parameter, then the gateway also includes the isup-oli SIP URI parameter populated with the numeric value of the received ISUP OLI parameter.

For example, if the gateway receives an incoming IAM message with calling party number 732-758-5735, and OLI value of "29", then the gateway includes in the outgoing SIP INVITE message the following From header:

From: sip:+1-732-758-5735@example.com;user=phone;isup-oli=29

Similarly, if incoming MF signaling includes ANI II information, it is mapped to the isup-oli SIP URI parameter in the From header of the corresponding INVITE.
Likewise, when a gateway receives SIP signaling containing the isup-oli SIP URI parameter, it is mapped to the appropriate PSTN signaling, i.e., the ISUP OLI parameter, or MF II digits.

3. Formal Syntax

The following syntax specification uses the augmented Backus-Naur Form (BNF) as described in [RFC5234].

The isup-oli parameter is a SIP URI parameter. Per the ABNF in RFC 3261 Section 25.1 it is a "uri-parameter". The formal syntax is:

\[
\text{isup-oli} \quad = \quad ;\text{isup-oli}=\text{oli-value} \\
\text{oli-value} \quad = \quad 2*(\text{DIGIT})
\]

The "isup-oli" SIP URI parameter is optional. It can be included at most once in a SIP URI.

4. Semantics

When a SIP URI describing the originator of a session contains an isup-oli parameter, the intended semantic is that the "class of service" defined for this session by that isup-oli value applies to the entity described by that SIP URI. For example, if a From header contains a SIP URI with an isup-oli parameter with value "29" indicating "prison/inmate service", this means that the call/session is characterized as originating from a prison/inmate access. This follows directly from the mapping of the OLI information in the PSTN signaling to the SIP signaling.

Population and interpretation of "oli-value" is taken from the ANI II values registry maintained by the North American Numbering Plan Administration (NANPA) at

That is, the value is in the format of exactly two digits, with the interpretation as given in the registry.

In PSTN signaling, the OLI provides information about the class of service at the originating access for a call, which effectively characterizes the originator. Thus, the isup-oli SIP URI parameter is only meaningful when associated with the originator of a session.

5. Security Considerations

This document describes a parameter currently in use; it does not define a new protocol mechanism. This section is provided to identify potential risks with the use of this parameter.

The isup-oli parameter conveys information of a private nature. In the PSTN this information is not shared with end users; similar steps should be taken with the isup-oli parameter to prevent disclosure to unintended recipients.

In the PSTN, OLI information is populated by trusted network equipment, not by end user equipment. This should also apply to SIP signaling.

If the isup-oli value can be tampered with, a caller may be able to access services which would otherwise be unavailable. For example if an isup-oli for a call from a prison/inmate access could be changed to another value, or removed completely, then the appropriate restrictions would not be applied to the call. Likewise an attacker could modify the OLI value to one with greater restrictions, limiting the services that the caller would otherwise legitimately access. Restricting the use of this parameter between domains with an appropriate trust level and using security mechanisms which provide message integrity, such as TLS, can mitigate these risks.

6. IANA Considerations

This document does not request any action of IANA. It simply documents the current usage of the isup-oli SIP URI parameter.
7. References

7.1. Normative References


7.2. Informative References


8. Acknowledgments

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