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**Requirements for Referral in Mobile Network, input to GROBJ BoF  
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## Abstract

This document lays out the requirements that need to be met by the potential referral modifications for the mobile network.

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## **1. Introduction**

Mobile operators are using referrals in their network to make entities reachable straightforward. However, this simple approach is failed by deployment of firewall and translator (like NAT) in the network, in which causes the translation function happened during the communication. This document is intended to discuss about the requirements that need to be met by the potential referral modifications in the mobile network.

### **1.1. Conventions used in this document**

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [[RFC2119](#)].



## **2. Requirements of referral design**

### **2.1. R1 Standard referral format**

The referral formats need to be standardized. Applications can understand the meaning of referral informed, such as IP address, possibly protocol and port numbers. However, there is an open question whether this standard referral design should be use for new applications only, or including all existing applications.

### **2.2. R2 Simplify ALG during NAT traversal**

There are middle boxes, like firewalls and translators, exist in the mobile network, which cause applications need to do translations, especially ALG. The cost of translation functions included ALG is huge for the mobile operator in terms of implementation, performance. Standard referral could simplify ALG implementation during NAT traversal in the mobile network.

### **2.3. R3 Network inspection consideration**

Operators sometimes need to inspect information or details during communication for administration motivations. If referral format is standardized, it is easy for operator to capture and investigate the communication information they required.



### **3. Security Considerations**

This document does not create any new security considerations.



#### **4. IANA Considerations**

This document does not require any IANA actions.

## **5. Normative References**

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.

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