

**November 27-30, 2001**

**Sophia Antipolis, France**

**Agenda Item:** TBD  
**Source:** Ericsson  
**Title:** P-CSCF initiated authentication  
**Document for:** Discussion and decision

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## 1. Scope and objectives

This contribution discusses the requirement for P-CSCF initiated authentication of an IMS subscriber. It is concluded that

- there is no clear charging requirement for this mechanism in any technical specification
- the mechanism seems not to add so much value since the HN is controlling the authentication procedures

Until such a requirement is defined and the value of the mechanism is understood it is proposed that this requirement which currently is FFS in [TS33.203] be removed.

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## 2 Background

In [S3-010100] the working assumption that the HN should perform the authentication was defined. Later on in the LS from SA2 [S3-010209] it was concluded that (on the HSS vs. S-CSCF issue) 'SA2 would like to kindly inform SA3 that it has discussed the two alternatives during SA2#18, and has agreed in principle that subscriber authentication shall be performed in the S-CSCF'. The [TS33.203] has adopted these working assumptions and the HN is performing the authentication in the S-CSCF.

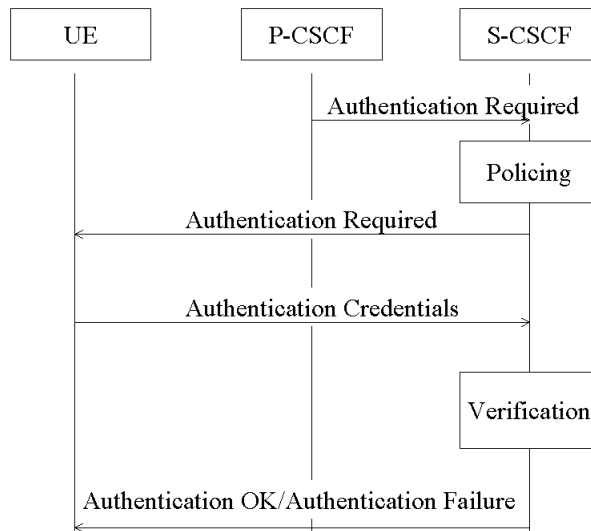
In line with these working assumptions [TS33.203] also specifies that the requirement that the S-CSCF shall have the capability to initiate re-registrations and force the subscriber to be authenticated. As an editors note in [TS33.203] it has been left for further study whether the P-CSCF should also have the same capability i.e. to force a re-registration.

Some new reference points for IMS charging have been defined in [TR23.815] including the reference point P-CSCF - CCF (Rp). This reference point will be used by the P-CSCF to download charging information about a particular user into a charging collecting function. In the current version of [TR23.815] there is no information or requirements that substantiates a requirement in [TS33.203] that the P-CSCF shall be able to force a re-registration.

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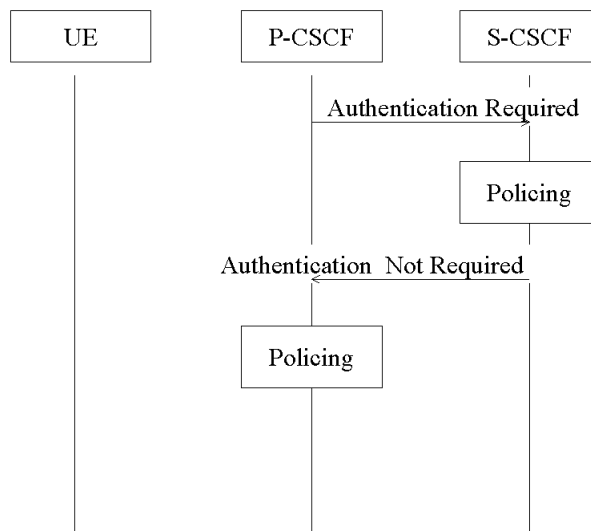
## 3 Implications

If the P-CSCF shall be able to force a re-authentication the signalling flow would at a high level look like:



Hence in order to keep the working assumption that the HSS delegates the authentication to the S-CSCF it appears that the S-CSCF shall have a policing function that takes e.g. previous authentications and existing roaming agreements into account. In order to make the decision the P-CSCF could send more information in the Authentication Required message e.g. reasons for why the P-CSCF demands a re-authentication. These parameters could be used as an input to the policing function in the S-CSCF.

Since the HN controls the authentication the S-CSCF might have trust in the current security association and thus the signalling flow in that case would look like:



In this situation it seems natural that the existing security association between the UE and the P-CSCF is kept valid. That means that the policing function in the P-CSCF would be simple since the P-CSCF is dependent on the policing function in the S-CSCF according to the current working assumptions.

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## 4 Conclusions

This mechanism implies that new flows have to be developed including possible failure scenarios. Furthermore the mechanism shall not de-register a user if the HN decides that no authentication is required hence the value of such mechanism could be questioned. In order to make a sound decision in the S-CSCF it would probably require that some more information be sent to the S-CSCF, which would increase the work effort to get the mechanism in place.

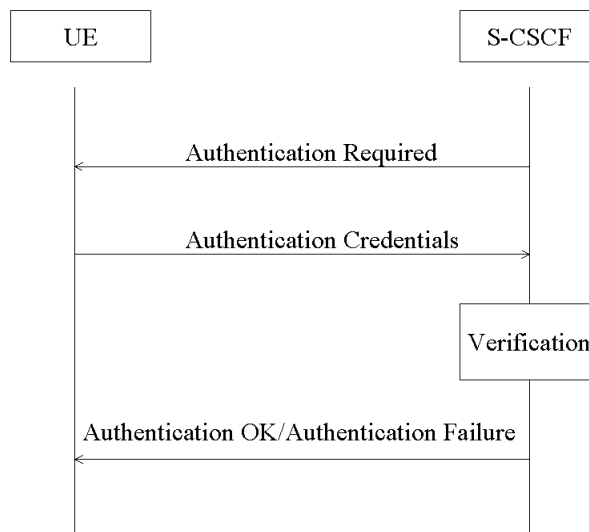
Due to the complexity of this function, and that no work has started for developing, and the value of the mechanism seems not to be clear and there is no clear requirement to develop this mechanism Ericsson proposes this functionality be not included in the Release 5 timeframe in [TS33.203].

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## 5 Changes Needed to TS33.203

### 5.1.2 Re-Authentication of the subscriber

The S-CSCF shall be able to initiate an authenticated re-registration of a user at any time, independent of previous registrations, see figure below.



*[Editors Note: It is FFS whether the P-CSCF should also be able to initiate re-registrations].*

*[Editors Note: Solutions for the initiation of network initiated authenticated re-registration shall be elaborated by CN1. The stage 2 information flows shall be included in this TS 33.203.]*

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## References

- [TR23.815] 3GPP TSG SA WG2, TR 23.815, Release 5, Charging implications of IMS architecture; v0.2.0, October 2001
- [TS33.203] 3GPP TSG SA WG3, TS 33.203, Release 5, Access security for IP-based services, Core Network Subsystem Stage 2 ; v0.6.0, September 2001