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論文題目： Design and Implementation of a Roaming Authentication System for Various Trust-level ISPs (信頼度の異なる ISP 間のローミング認証システムの設計と実装)

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### Summary

Recently, hotspot services operated by small Internet Service Providers (ISPs) have gradually become widespread. This trend makes roaming authentication difficult from the viewpoints of both users and ISPs. For users, the problem is that hotspot phishing attack in which a fake ISP may steal users' authentication information becomes rampant. For ISPs, the problem is that if an ISP does not attend the federation with other ISPs, it is difficult to serve customers of other ISPs.

In order to solve these two problems, our scheme introduces a direct secure authentication channel between users and their authentication party -- "IDentity Provider" (IDP). The IDP forwards terminal information to ISPs so that ISPs only provide communication channel to users. We also introduce a reputation-based model to judge ISPs, so that IDP can verify the legality and quality of ISPs. This system can realize secure roaming authentication independent of trust levels of ISPs. It can also widen the customer base for ISPs without the former necessary affiliation to any federation.