

# 要 旨

## NGN における Presence 通知プロトコルの研究

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次世代通信網インフラストラクチャとして検討，導入が進められている NGN(Next Generation Network) では，IMS(IP Multimedia Subsystem) が国際標準に採用されている．IMS でも特に RCS(Rich Communication Services) は基本コミュニケーションサービスとして期待されている．RCS は電話やメールに代わる基本コミュニケーションサービス群のことで，IM(Instant Message)，SMS(Short Message Service)，MMS(Multimedia Message Service)，Presence Service，Voice Call，Video Share，Image Share の 7 種類のサービスが当てはまる．特に Presence Service は，状態 (Status) や属性 (Characteristics) を含む Presence 情報を通信相手に通知するサービスである．Presence Service を利用することにより，ユーザは通信相手の Presence 情報に応じて通信手段や通信するタイミングを選択するなど，利便性の高い通信サービスが利用可能となる．しかし，現状の Presence Service は，通信相手との親密度について全く考慮されていない．そのため，普段から頻繁に連絡を取らない相手の Presence 情報を必要以上に取得してしまう．また，既存研究で Presence Service と RCS の Presence Service 以外のサービスとの連携が提唱されているが，Presence 通知方法のみが提唱されている．

本稿では，Presence Service を用いてより利便性が高く快適な通信手段を提供するため，新しい Presence Service を提案した．さらに，提案する新しい Presence Service が実現可能なプロトコルも同時に提案した．新しい Presence Service では，通信相手との親密度に応じて通信相手や Status の階層化を行う．また，新たな Status として “RCS の利用可能

サービス (Available\_Service)” を設け，この Status を基に RCS の各機能のサービス利用制御を行う。

検証では，既存の Presence Service と提案方式における機能を比較し，提案方式の有効性を示した。また，既存研究と提案方式においても機能の比較を行い，提案方式の有効性を示した。最後に，RCS に連携しうる新しい次世代の Presence Service であることを確認した。

キーワード NGN, IMS, SIP, Rich Communication Services, Presence Service, Status, Messaging クラスタ

# Abstract

## A study of communicators presence information notify protocol on next generation network

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In NGN, IMS(IP Multimedia Subsystem) has been adopted in the international standard. RCS is especially expected to be a basic communication services in IMS. RCS is basic communication services group instead of legacy telephone and e-mail. RCS has defined the seven services, which are IM(Instant Message), SMS(Short Message Service), MMS(Multimedia Messaging Service), Presence Service, Voice Call, Video Share and Image Share. Especially, Presence Service among them is a new service to notify the presence information to communicators. The presence information includes the status and the characteristics of the users. Using the presence service, users can use conveniently the other communication services. For example usages, users could choose communication tools and choose the best timing on communications. However, existing presence services are not considered well the intimacy with communicator. As a result, there is a problem to get more than necessity of the presence information of the communicator who does not take frequent contacts. In addition, the service system which collaborates with RCS and presence service is proposed in existing study. This system also proposed how to show presence information, too. However, this existing previous study proposed only showing function of the Presence information.

This paper proposed a new presence service to provide more convenient and more comfortable communication tools. Then, the protocol for the new presence service was

also proposed. This presence service proposes layering architecture of communicator and numbers of useful status based on the intimacy with the individual communicator. In this consideration, the new status of "available services of RCS" is introduced. This status control the other RCS services well.

For the verification of the proposal, comparison of the previous presence service and the proposed system was carried out. The proposed system could demonstrate effectiveness. Finally, the proposed presence service is evaluated to be effective on collaborations with the other RCS services. This presence service would be preferable as the features of new next-generation presence service.

***key words*** NGN, IMS, SIP, Rich Communication Services, Presence Service, Status, Messaging cluster