Improved User Authenticated Key Management Scheme for 6G based Industrial Applications

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Abstract: *The Network In a Box is only one of the cutting-edge features that the Sixth Generation (6G) mobile technology is anticipated to provide (NIB). The NIB is a multi-generational, readily installable technology that offers connection services to applications utilised in uncommon circumstances, like on the battlefield or during natural catastrophes. Security is becoming even more crucial in the 6G communication system, and the NIB is no exception. Many active and passive attacks on the applications used in the 6G-enabled NIB are possible as a result of the unsecured channel. Having a secure user authentication and key management system in place is therefore essential. In order to protect the 6G-enabled NIB (iUAKMS-NIB) that can be used in industrial applications, this article suggests an enhanced user authentication and management scheme. The suggested method offers the best security against potential assaults on the 6G communication system because it is a modified and upgraded version of UAKMS-NIB. The key benefit of the suggested plan is that it outperforms other schemes in terms of performance. The analytical outcomes demonstrate that the suggested system offers improved security and is capable of withstanding a variety of attacks. In conclusion, the enhanced User Authentication and Management System that has been proposed is a crucial security measure for the 6G-enabled NIB. It performs better than conventional techniques and guarantees safe user authentication and key management.*

Keywords: 6G.

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