

Adaptive Privacy-Preserving Authentication in Vehicular Networks

Vehicular networks have attracted extensive attentions in recent years for their promises in improving safety and enabling other value-added services. Most previous work focuses on designing the media access and physical layer protocols. Privacy issues in vehicular systems have not been well address. We argue that privacy is a user-specific concept, and a good privacy protection mechanism should allow users to select the degree of privacy they wish to have. To address this requirement, we propose an adaptive privacy-preserving authentication mechanism that can trade off the privacy degree with computational and communication overheads (resource usage). This mechanism, to our knowledge, is the first effort on adaptive privacy-preserving authentication. We present analytical and preliminary results to show that the proposed protocol is not only adaptive but scalable.