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Privacy-Preserving Television Audience Measurement Using Smart TVs

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Title:	Privacy-Preserving Television Audience Measurement Using Smart TVs
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Abstract:	<p>Internet-enabled television systems, often referred to as Smart TVs, are a new development in television and home entertainment technologies. In this work, we propose a new, privacy-preserving, approach for Television Audience Measurement (TAM), utilizing the capabilities of the Smart TV technologies. We propose a novel application to calculate aggregate audience measurements using Smart TV computation capabilities and permanent Internet access. Cryptographic techniques, including homomorphic encryption and zero-knowledge proofs, are used to ensure both that the privacy of the participating individuals is preserved and that the computed results are valid. Additionally, participants can be compensated for sharing their information. Preliminary experimental results on an Android-based Smart TV platform show the viability of the approach.</p>