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Ethics Aware Object Oriented Smart City Architecture

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Abstract: A novel initiative in providing advanced civic amenities is the idea of smart city driven by the Internet of Things. Owing to a lack of consensus regarding what constitutes a smart city, diverse smart city architectures have been proposed.

However, it is observed that adequate consideration is not given to the most important element of a smart city i.e. its people. In our opinion, energy efficient technologically driven city does not necessarily lead to a smart city. Ethics, tradition and law form essential ingredients of complex social palette that cannot be ignored. In this work we propose Ethics-Aware Object-Oriented Smart City Architecture (EOSCA) that has two distinguishing features. Firstly, we propose an object oriented layered architecture where an object represents an abstraction of a real world thing along with requisite security and ethics parameters. Secondly, we propose to integrate socio-cultural and ethical aspects within the smart city architecture by dedicating a separate ethics layer. Such enhancement not only addresses the challenge of privacy and security of a smart city, but also makes it people friendly by incorporating ethics. Such measures would facilitate social acceptance of smart city paradigm and augment its economic value.

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