An Overview of Self-Organizing Network (SON) as Network Management System in Mobile Telecommunication System

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Abstract

The rapid advancement in technologies employed in mobile telecommunication industries has improved the sector over the years.

However, it has also introduced another problem of ensuring backwards compatibility between newer and older generations. Furthermore, as the technology evolved from the older generation to newer ones, configurable parameters increased, making it more complex to manage manually during installation. This situation worsens when the mobile network operator integrates network elements from different Original Equipment Manufacturers (OEMs). As a result, the Self-Organizing Network (SON) management system was developed. However, with increasing data traffic supplemented by new and developing technologies and correspondingly bigger networks, it is clear that network operations must be redefined in order to ensure optimal performance. For device installations, configurations, resetting network settings, and general network administration, a manual configuration technique necessitates specialized skills. This is a time-consuming and expensive operation. In today's wireless technology, using this strategy results in poor network quality. As a result, the emergence of enhanced mobile networks has brought attention to the need of automation. SON enables operating effectiveness and next-generation simplified network monitoring for a mobile wireless network by automating the process. As a result of the introduction of SON in LTE, network performance is improved, end-user Quality of Experience (QoE) is improved, and operational and capital expenses are reduced (OPEX). This paper highlights the SON techniques in the mobile wireless network and briefly describes SON architecture.

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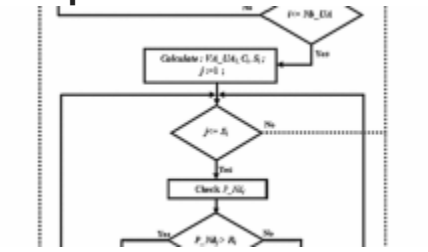

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