

# How network operators can enhance Ambient Assisted Living applications through Next Generation Networks

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**Abstract.** Within the technological framework of Information and Communication Technologies (ICT), consumers are currently requesting multimedia services with simplicity of use, reliability, security and service availability through mobile and fixed access. Network operators are proposing the Next Generation Networks (NGN) to address the challenges of providing both services and network convergence. Apart from these considerations, there is a need to provide social and healthcare assistance services in order to support the progressive aging in the elderly population. In order to achieve this objective, the Ambient Assisted Living (AAL) initiative proposes ICT systems and services to promote autonomy and an independent life among the elderly. This paper describes the design and implementation of a group of services, called “service enablers”, which helps AAL applications to be supported in NGN. The presented enablers are identified to support the teleconsulting applications requirements in an NGN environment, involving the implementation of a virtual waiting room, a virtual whiteboard, a multimedia multiconference and a vital-signs monitoring presence status. A use case is defined and implemented to evaluate the developed enablers’ performance.

**Keywords:** Next Generation Networks, IP Multimedia Subsystem, services enablers, Ambient Assisted Living services

## 1. Introduction

Information and Communication Technologies (ICT) are currently helping to deal with several problems in the social and health care environment of the elderly. The current progressive ageing of the world population and a turning of deadly diseases into chronic diseases through technical and medical advances; as well as the moving of some care services from specialized centres to primary attention centres or homes; are prompting a request for social and healthcare assistance services. In this context, ICT are being employed to support a wide range of per-

sonal care models in the daily life of the elderly such as: teleassistance services, home telemonitoring and home rehabilitation [1].

In order to deal with this issue, the Ambient Assisted Living (AAL) initiative [2] tries to offer an “active ageing” by highlighting elderly people as active participants in an inclusive society. Its main objective is to foster innovative ICT-based products, services and systems for ageing well at home, in the community, and at work, therefore improving the quality of life, autonomy, participation in social life, skills and employability of older people and reducing social and health care costs. Consequently, several

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