



Context Based Services for NGN : A Forensic Carving Based Approach

Y.K.Sundara Krishna¹

¹Professor, Department of Computer Science,
Krishna University, Machilipatnam

Ch.Suresh Babu²

²Research Scholar,
Krishna University, Machilipatnam.

Abstract - In the current generation, all the users right from the end user to sophisticated or advanced user, as per their needs, there is a great demand for various kinds of services like data service, voice service, application service etc., more on the context based instead of infrastructure based service. Next Generation Networks provides all the user required services with a good strategy of maintaining the services and management of services. This paper focuses on the management of these services offered in Next Generation Networks in a systematic and dynamic to all the users.

I. INTRODUCTION

Next Generation Networks aims to provide very sophisticated, highly flexible, user-friendly, user sensitive, context based environment, to the end users with an integration of heterogeneous networks, heterogeneous services, through a unique compatible user interface, through a loosely coupled, transport and service management infrastructure.

II. SERVICE CATEGORIES FOR MOBILES

Next Generation Networks aims to provide several heterogeneous services through an interface in user friendly manner on demand basis. The heterogeneous services are offered by various service providers. The service providers required a compatible user interface among such providers and users. Such service providing environment required to categorize these services in order to develop category wise service interfaces in Next Generation Networks.

III. SERVICE PROVIDING APPROACH

The particulars of services offered by various service providers are stored in central database. They can be selected with an index number. The requirement of the customer will be obtained based on the context of the user in terms of parameters such as location, user profile and demand of service from time to time based on the situation and user specific requirement and also based on the user track available in the log. The values for these parameters are consolidated and the index number of the service will be obtained using hash functions. The index number is used to select the required service. These index numbers further used in the information available in the log based forensic database and also current demand of services available in as per the recent log database.

Based on these parameters the user will be provided two categories of services either demand driven service paradigm or context based service paradigm.

The core of Next Generation Networks is aims with a capable of providing services to the users in dynamic environment to suit the dynamic requirements of the user. For users, whose requirement is unpredictable and running in an environment which needs timely based services with dynamically varying services load dynamic driven services based on timely requirement. This way of providing services to the end user is called as 'Demand Driven Service Paradigm'[1].

Most of commercial and individual users required services according to the present situation in which they are discharging functionalities. Such services are usually belongs to a category, soft in nature and are not strictly time bounded. Such users are expecting that service providers shall offer services based on his present context. The service providers are expected to continuously monitor the state of the end user and shall identify significant changes in the context of the user, and also required to predict near future requirement of the user based on the log data available. Such type of service paradigm is called "Context Based Service Paradigm".

IV. LOG BASED FORENSIC DATABASE FOR SERVICE MANAGEMENT IN NGN

This paper proposes to address issues pertaining to maintain service tracks of user in a large database to incorporate demand driven service paradigm and context based service paradigm in the Next Generation Networks needs to fulfill timely requirement of end user. These services are huge in number and maintain such service providing system is complex and sometimes it is difficult to offer services to certain users in timely manner. This paper also proposes to address Log based forensic database in order to reduce the complexity in the situation and to offer immediate service response to the users.

The services required by the user will be provided based on the information recorded in the forensic database with the help of parameters such as Time, Location, Service, Service Category and user. Context based services will be offered to the user by searching in the forensic database first matching on the location (location based services[3]) and the time. And then, these services are again

filtered/matched and ordered against the services which were already utilized by the user earlier on a high priority basis followed by the rest of services. These services may also be ordered based on the category of the services[2].

V. CONCEPT OF FORENSIC DATABASE FOR IMPLEMENTATION

In order to utilize the forensic info in the database there must be defined a sophisticated database architecture along with a framework to retrieve the data in an unified approach, in distributed manner by integrating various forensic centers where the data is maintained and updated from time to time.

VI.CONCLUSION AND FUTURE WORK

In this paper, we have presented the basic concept of context based services offered in Next Generation Networks using a forensic carving based approach to the user. Further, we propose to publish the suitable database management system for context based services offering and the methods to query the required info from the database based on the context of the service required by the user in dynamic manner.

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