

# Architecture of NGN with centralized and decentralizing control system

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**Abstract - The article to architecture and principles of decentralizing control system construction is devoted. The method of intellectual service maintenance is considered.**

**Keywords - Next generation network, intellectual service, decentralizing control system, Softswitch.**

## I. INTRODUCTION

The amount of users which became more well-informed and want to use intellectual services grows lately. Next generation network (NGN) is the most modern network which is able to give the widest spectrum of services. Therefore it is possible to talk about actuality of intellectual services management in NGN. In printing editions consideration to conceptions of NGN construction and transition methods from existent networks to the next generation network is given. But it is nothing said about perfection of NGN control system almost. Works of many modern scientists to the review of NGN architecture and management principles are devoted. In labours of B. S. Gol'dshteyn and O.B. Gol'dshteyn, O. Atcik, the questions of passing to the next generation networks, mobile convergence, sources and submarine part of this technology are described. A. Zarubin, O. Pinchuk, attended the engineerings aspects of COPM in the networks of NGN. O. B. Gol'dshteyn and O. Atcik analysed two competitive conceptions of NGN: IPCC and TISPAN.

## II. THE CONTROL SYSTEM ARCHITECTURE

For the intellectual services management intellectual buildup is accountable. It is the unique center of management which executes the switching function of intellectual services and serves them.

Centralized control system (CCS) in the modern networks of NGN is used. It allows of centralized introduction of new services, execute of installing software for all control devices from the center of management. Architecture of NGN with CCS has a lot of failings sufficiently. Foremost at growth of amount of subscribers the amount of requests for a service and general time of maintenance of request grows. In addition on outage a server a network becomes not able to give intellectual services [1]. There is usually a decision for this problem. It is foremost the use of the distributed (DiCS) and decentralizing control system (DCS). DiCS was used for a management in intellectual networks and has shown oneself to good advantage. DiCS foresees existence of central server which contains all the necessary logic of service. At the same time the so-called blocks of management service with satellite databases, which are

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darted out to the switching point of service are foreseen. They contain information and service logic for the most often common services. In the case of increase of requests for some service which is not in a satellite database, information for it and logic of service can be load from central server. However it has some failings also.

For the decision of existent problems it is suggested to use DCS with a few universal and specialized servers. The universal server contains logic of service for all of classes of services. The specialized server contains logic of service only for the certain set of classes of services and requires less then universal server time for service and costs more cheap.

Servers are on insignificant distances from a Softswitch, that is why it is possible to talk that service takes a place in a switch point of service. Intellectual buildup is practically a separate network which is needed for exchange and managers messages signals between servers. Such as network the system of signaling or data-transmission network can be used. At an exchange information between servers protocols MGCP, MEGACO, SIP can be used. Connection between Softswitch and server is carried out through opened API (Parlay, Camel). At such architecture maintenance of service is carried out as follows. The request of subscriber on a service acts to one of points of signaling, and farther overcomes a certain way and gets to Softswitch. If a service is not intellectual, it is served Softswitch software. If it is intellectual, Softswitch send reques to the server on implementation. If a server is free, it serves the request. Otherwise there is verification of buffer of queue. If the buffer is filled, the request is lost. If there are places – the request stands in a queue. In the case when a server is not able to serve a request for lack of necessary service logic and necessary information, it is passed to other server. For a search proper a server it is possible to use the special maintenance probability matrix of request of certain class by each of servers.

## III. CONCLUSION

Certainly, architecture of NGN with DCS will better in all function at the considerable loadings of network. However such approach has not those advantages which CCS had. Clearly, that at once there is other question, related to efficiency of the use of NGN architecture with DCS and CCS. An answer for it can give the calculation of resulting scalar qualit criterion of control system functioning.

## REFERENCES

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