

PCN CELLULAR PLANNING AND NETWORK DEVELOPMENT

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In the name of Allah S.W.T, The Merciful, the Beneficent, The Almighty One.
Praised to HIM alone for HIS endowment that let me complete this final year project.

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Lastly, I hope that this project will help to provide new ideas to lectures as well as the students. Thank you.

ABSTRACT

In this project the objective is to plan and develop a Base Transceiver Station for Personal Cellular Network (PCN). This project is using A955 software as a tool (Alcatel software). There is no hardware as all modules are implemented in software stored in the support processor. This paper discuss how to choose the site with following factors :

- 1) Topology
- 2) Morphology
- 3) Antenna to be used
- 4) Coverage area
- 5) Power budget
- 6) Traffic

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CHAPTER 1

1. INTRODUCTION

1.1 General

The evolution and the history of land mobile communications went way back in the early 1920's where one-way broadcasts (simplex) were made to receivers in mobile police cars in Detroit. Later in the early 1930's the first two-way (duplex) mobile system was in operation by the Bayonne, New Jersey , police department . Up to early 1930's the Connecticut police department implemented the first two way Frequency Modulation (FM) mobile system which proved to be marked improvement to the earlier system. Thus the early foundation of mobile communication had been built in the United States for the development of commercial mobile communications market.

As year go by, the mobile phone users gained sophistication. Thus their need to communicate anywhere anytime became very urgent. The existing system needed to be improved. The developers of radio telephone were experimenting and researching the new cellular communication. The first fully automatic mobile telephone system was put into operation in 1948 in Indiana to replace the use of operators who used to manually patch radio calls to the land telephone network.

By mid-1960's, the spectral efficiency of analogue FM systems effectively quadrupled. Other important technological developments the invention and application of automatic