

## INTRODUCTION

Microwave Path Engineering, basically, is a study performed on a potential microwave radio path to determine, initially, the heights at which antennae at both locations should be placed and the sizes of the antennae, for the particular system to perform within design specifications or reliability parameters.

System Engineering, as such, consists of two distinct analyses:-

- 1) Path Profiling for antenna height determination
- 2) System Calculations for antenna size determination.

Based on the data obtained, if necessary, other alternatives are then taken into consideration. Some of these are:-

- 1) Repeated system configuration for excessive height requirements
- 2) New path for excessive height and size requirements.

As the engineering progresses other factors are taken into consideration to arrive at an optimum design for a system to serve the particular need. Some of these factors include the terrain over which the path will operate, climatic conditions and relevant electronic data of the radio in system calculations.

INTRODUCTION (cont'd)

This project report, hopefully, will assist the layman or presumably Management Personnel of any Company in this field, in not only appreciating how a microwave link is designed, but also in performing one. The literature serves to give an insight into microwave jargon, thereby bringing about understanding, while the user prompted Program performs the actual design to give the required information.

The report does not dwell to any extent on microwave radio systems since the choice of a particular system for any user application is limited by certain basic criteria such as capacity, cost and features.

However, some of the data pertaining to the particular microwave system chosen are used in coming up with the final system design.

In this report aspects pertaining to towers such as wind loading and required tower strength are not addressed, even though important. These aspects are not the direct responsibility of the Microwave Engineer. However, all the pertinent data for determining this should be passed on to the relevant personnel.

The Appendices of this text contain a glossary of terms as reference for each chapter, which seeks to simplify some of the not too common terms used in the literature.