

## Multiple Interception of Single Target

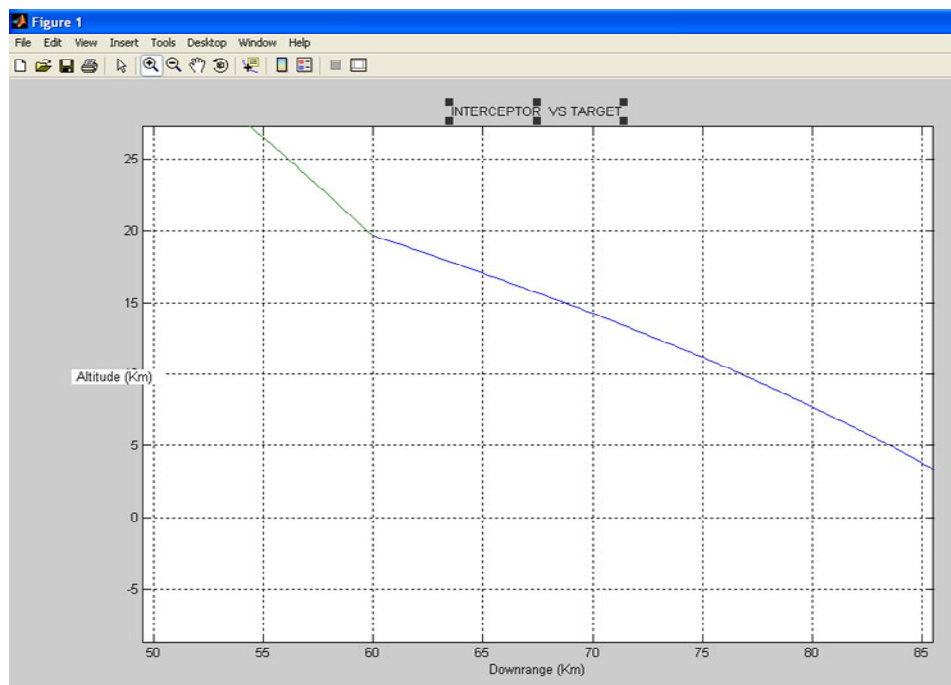
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**Abstract-- Ballistic Missile defence plays an important role to protect the areas of the country by the use of the So called INTERCEPTORS of various kinds. The interceptors in INDIA are test fired successfully. But the problem is that the kill probability of a single interceptor is only 0.02% only. Because there is no redundant parts neither in ELECTRONICS NOR MECHANICAL (PROPULSION) Subsystems. The alternate is that MULTIPLE INTERCEPTORS to have HIGH KILL PROBABILITY (TWO INTERCEPTORS HAVE A kill probability of 0.53% and 4 INTERCEPTORS have a kill probability of 99.8%). Hence a matlab simulation programs are written for 1, 2, 4 INTERCEPTORS.**

**Indexing terms: Kill probability, Interceptors, Ballistic Missiles, Area defence etc.**

### I.INTRODUCTION

The anti ballistic missile has been developed by the countries like U.S.A, RUSSIA, ISRAEL, FRANCE, CHINA, JAPAN and INDIA. In India we have developed a LAYERED AIR DEFENCE That is EXO AND ENDO ATMOSPHERIC INTERCEPTORS such as PAD(PRITHVI VERSION OF AD) Named as PRADUMNA and ADVANCED AIR DEFENCE MISSILE(AAD) Named as ASHVIN.DESCRPTION: Apart from developing PAD AND AAD missies We hav0e developed AD1,AD2 and PDV which can engage ballistic missiles of RANGE as far as 5000KM.In future course of time INDIA is going to take a taskp of LASER BASED MISSILE DEFENCE.INDIA is going to use LASER BASED MISSILE DEFENCE by using satellites and unmanned AREAL VEHICLES and also by SPACE BORN laser and AIR BORNE LASER. Also INDIA is developing ROBOTS who can fight in wars replacing the ARMY SOLDIERS IN THE REAL TIME WAR FIELDS IN this article matlab programs are written to intercept one,two and four interceptors, That is if one interceptor fails to kill THEN AFTER CERTAIN TIME a second interceptor is fired which can kill the target. ALSO like for the HIGH KILL PROBABILITY a program is written to have 4 interceptors fired.



**FIGURE1: SINGLE TARGET INTERCEPTION THERE ARE TWO INTERCEPTORS WITH RED AND GREEN MIXED BUT THE FIGURE3 SHOWS THAT THEY ARE AT DIFFERENT RANGES .THE BLUE IS TARGET**

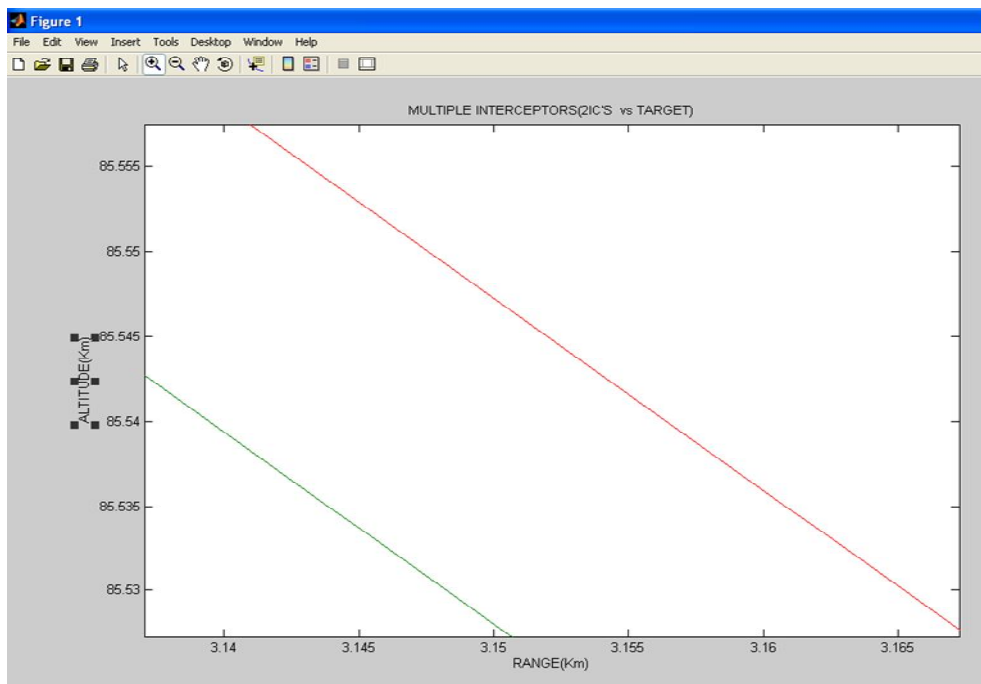


FIGURE 2: SINGLE TARGET INTERCEPTION WITH 2 INTERCEPTORS

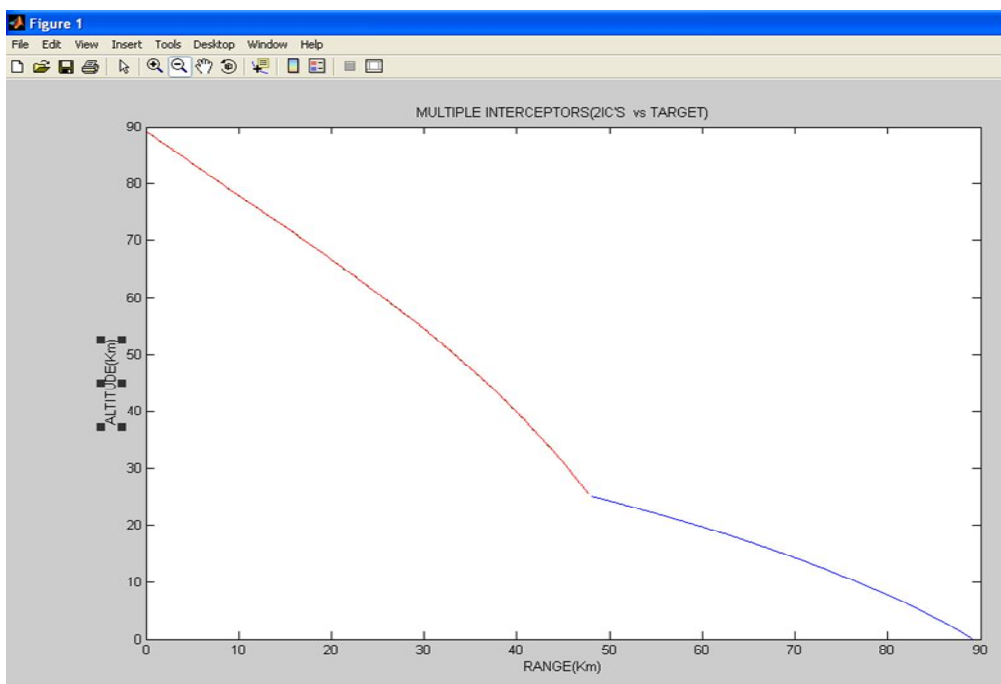


FIGURE3: TWO INTERCEPTORS SHOWN AT DIFFERENT RANGES

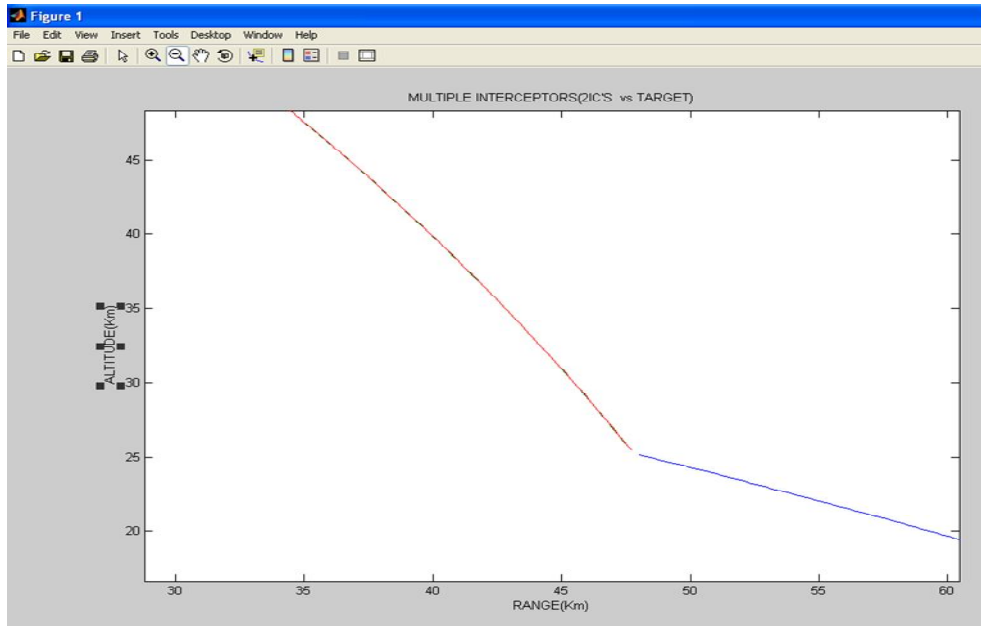


FIGURE3: TWO INTERCEPTORS SHOWN AT DIFFERENT RANGES

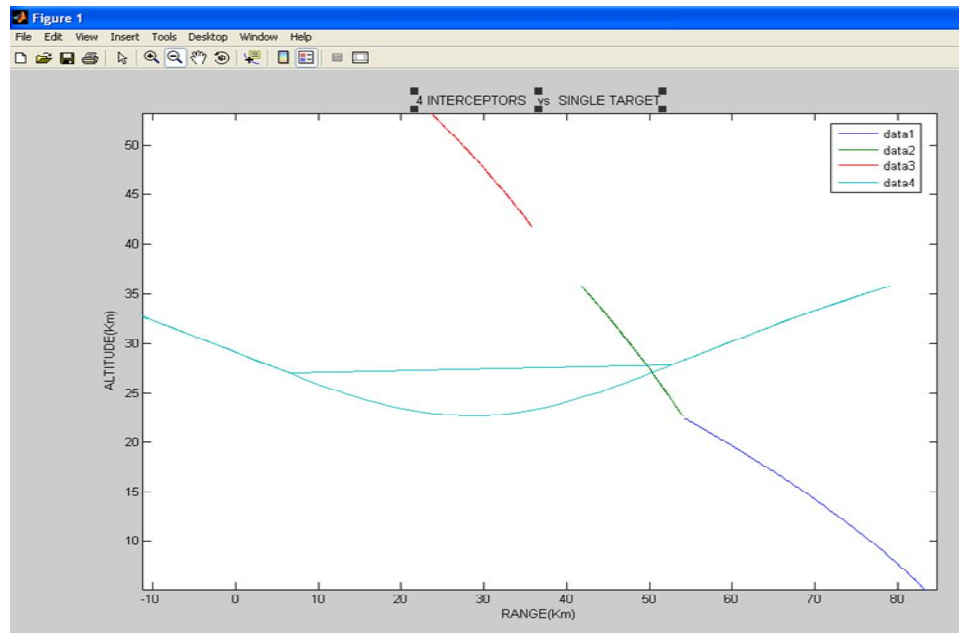


FIGURE 4: INTERCEPTORS INTERCEPTING SINGLE TARGET

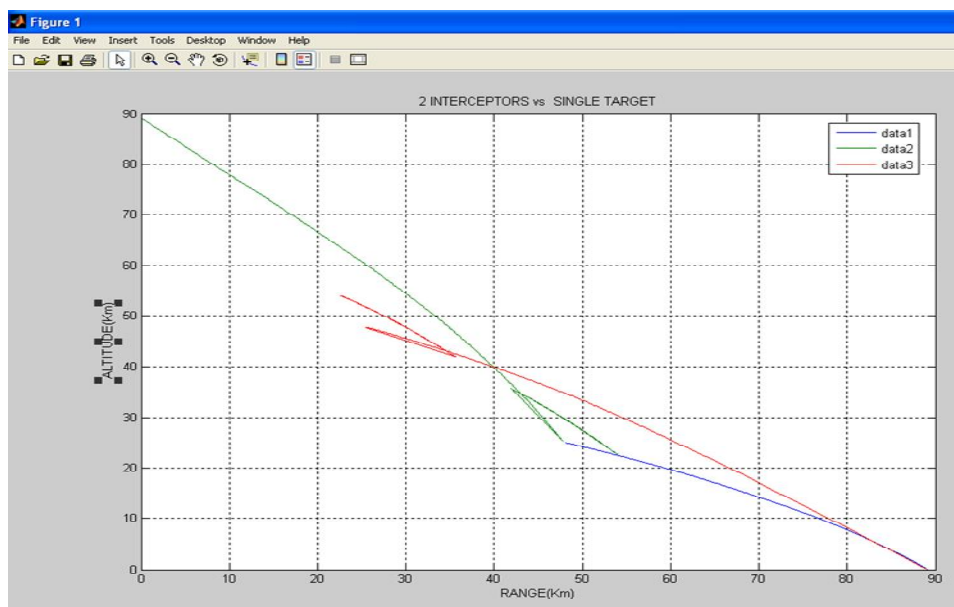


FIGURE 4: INTERCEPTORS INTERCEPTING SINGLE TARGET

## II. CONCLUSION

The Redundancy of not having in the interceptor subsystems has become a necessity to have multiple interceptors to be launched has a hit to kill probability.

## III. REFERENCE

[1]. A Text Book titled "Strategic and Tactical Missile Guidance" by P.Zarchan , AIAA Publisher.