

**Agenda Item 4:** Frequency coordination process and improvement for the Asia/Pacific Region**PROPOSE USE OF TERRAIN DATA FOR
FREQUENCY ASSIGNMENT PLANNING IN FREQUENCY FINDER**

(Presented by Thailand)

SUMMARY

This working paper proposes to explore the possibilities and benefits of using terrain data in Frequency Finder to increase the efficiency in frequency assignment planning for the frequency band 117.975 – 137 MHz.

1. INTRODUCTION

1.1 This working paper proposes to explore possibilities and benefits in using terrain data in Frequency Finder to increase the efficiency in frequency assignment planning based on the result of the analysis conducted by Thailand (Aeronautical Radio of Thailand (AEROTHAI)).

2. DISCUSSION

2.1 For a number of years, in addition to Frequency Finder, Thailand (AEROTHAI) has been using an additional radio frequency propagation software tool for frequency assignment planning purposes.

2.2 Recently, a new requirement arose for a new frequency to support the air traffic control operation at U-Tapao International airport (12° 40' 55" N 100° 59' 55" E). 127.200 MHz was requested to support approach control service (APP U-150/450). The frequency was found to be used in Chiang Mai, Gong Kedak (Malaysia), Kathmandu (Nepal) and Palembang Sultanate (Indonesia). The use of the frequency in Chiang Mai (ATIS (260/450) / 18° 46' 11" N 98° 57' 58" E) and Gong Kedak (Malaysia) (ATIS (260/450) / 05° 48' 00" N 102° 29' 00" E) was of concern. Co-channel compatibility for the 3 locations (U-Tapao, Chiang Mai and Gong Kedak) were performed using frequency finder and the software analysis tool mentioned above.

2.3 The result from Frequency Finder, where terrain is not taken into account, showed an overlap in coverage for the facility in Chiang Mai and U-Tapao, making the reuse of the frequency impossible due to co-channel interference. However, when the alternative software was used, where terrain was taken into account, the overlapping coverage area between the two facilities was reduced, allowing for reuse of the frequency. The results are provided in the attachment to this working paper.

2.4 As the results indicated, there is a potential to increase the number of VHF channels for future assignment. It would be worth exploring the benefits that could be gained by including terrain data in Frequency Finder, while taking into account the cost, time and complexity involved in the modification of the software.

3. ACTION BY THE MEETING

3.1 The meeting is invited to discuss the proposal contained in this paper.

ATTACHMENT



Figure 1: Simulation Results (Frequency Finder)

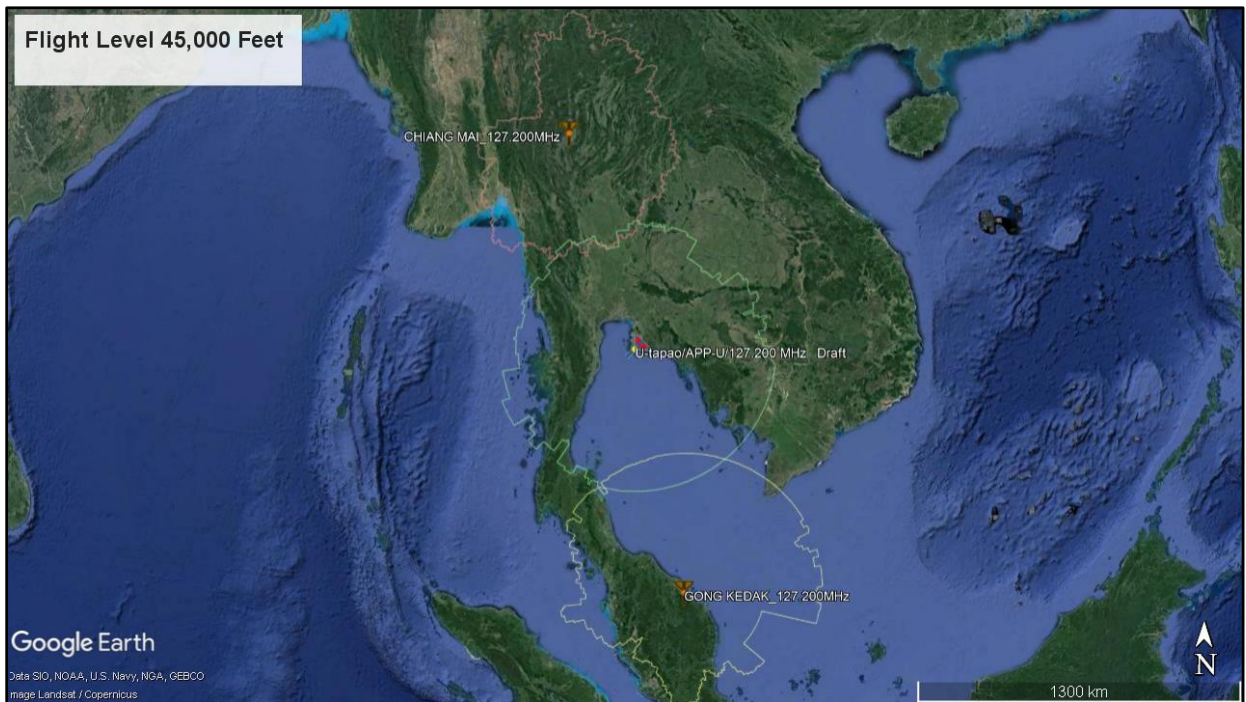


Figure 2: Simulation Result (Alternative Software Tool).