



ICAO

International Civil Aviation Organization

The Eighth Meeting of the APANPIRG ATM Sub-Group

Video Teleconference, 23 – 27 November 2020

## Agenda Item 6: ATM Coordination (Meetings, Route Development, Contingency Planning)

### NEED OF EFFECTIVE IMPLEMENTATION OF HIMALAYA 2 ROUTE

(Jointly Presented by Nepal and Myanmar)

#### SUMMARY

This paper presents the necessity and significances of long-awaited Himalayan-2 route that not only fosters the harmonized and economically viable air route in the reduction of air distance, time, fuel consumption and CO2 emissions but also provides a better option to decongest the traffic over Bay of Bengal and optimize the airspace use of involved States. So, Nepal appeals to the concerned States, ICAO and IATA for necessary commitment, co-operation and action to bring the proposed route into use and reap the benefits at the earliest.

## 1. INTRODUCTION

1.1 The development of Himalaya 2 route along the southern slope of panoramic Himalayas stretches as a part of EMARSSH (Asia to Middle East/Europe Route Structure South of Himalayas) project in 2002. Since then, several ATM initiatives have been taken at regional and sub-regional levels to materialize the concept.

1.2 Nepal has been proposing this route in different international forums for almost two decades. Some of such international forums are mentioned below:

- ICAO APAC DGCA/56 (2019),
- APANPIRG/25 (2014),
- ICAO A38 (2013) and
- ICAO APAC DGCA/42 (2005).

1.3 Asia Pacific Region has been experiencing tremendous air traffic growth. There is the increased congestion and delays of air traffic flows in the region and specifically in the Bay of Bengal. If the Himalaya 2 route will be materialized, it will not only contribute in decongesting the air traffic flows over the Bay of Bengal and over LSO in Myanmar FIR but also helps in optimizing airspace use of Nepal, India, Myanmar and China. This route if connected with L626 will link East Asia, Middle East and Europe through Kathmandu FIR, thereby further benefiting the global aviation community.

1.4 In order to cater the present and future growth of air traffic in APAC region and in the corridor of Bay of Bengal, it is high time to implement the proposed Himalayan-2 route through further enhancement in en-route CNS capacity.

1.5 Realizing the potential of this route, ICAO has kept this route in the ICAO ATS route catalogue as future requirement since long.

## 2. DISCUSSION

### Need of implementation of Himalaya 2 Route

2.1 The proposed Himalaya 2 route is more direct route that joins Kathmandu and Kunming, saving round trip travelling distance by about 218 nm. There is a distance saving of about 220 nm to 360 nm in Kathmandu-Hong Kong sector via proposed Himalaya 2 route for round trip travel, depending on the route used by the operators. Here, the routes used by Nepal Airlines and Hong Kong Dragon Air have been taken into consideration.

2.2 DCA Myanmar in 1<sup>st</sup> Nepal-Myanmar ATM Coordination meeting held in Yangon on 31<sup>st</sup> October – 01<sup>st</sup> November 2019 agrees to implement the Himalaya 2 route structure as mentioned in ICAO route catalogue. For this, DCA Myanmar will plan to install new surveillance system and RCAG VHF station at Myitkyina Airport by FY 2021/2022.

2.3 CAA Nepal and DCA Myanmar jointly requests concerned States and IATA to review and upgrade their priority for the Himalaya 2 route, allowing to depict accordingly in ICAO APAC ATS Route Catalogue taking into consideration of the following facts:

2.3.1 Proposed Himalaya 2 route is a more direct route that saves the round trip flight distance by about 220 nm and time by about 30 min, thereby reducing fuel burn by around 2755 kgs and CO<sub>2</sub> emission by 8706 kg per round trip flight.

2.3.2 This will not only increase the efficiency of the airline operators but also enhance the global environment protection initiatives.

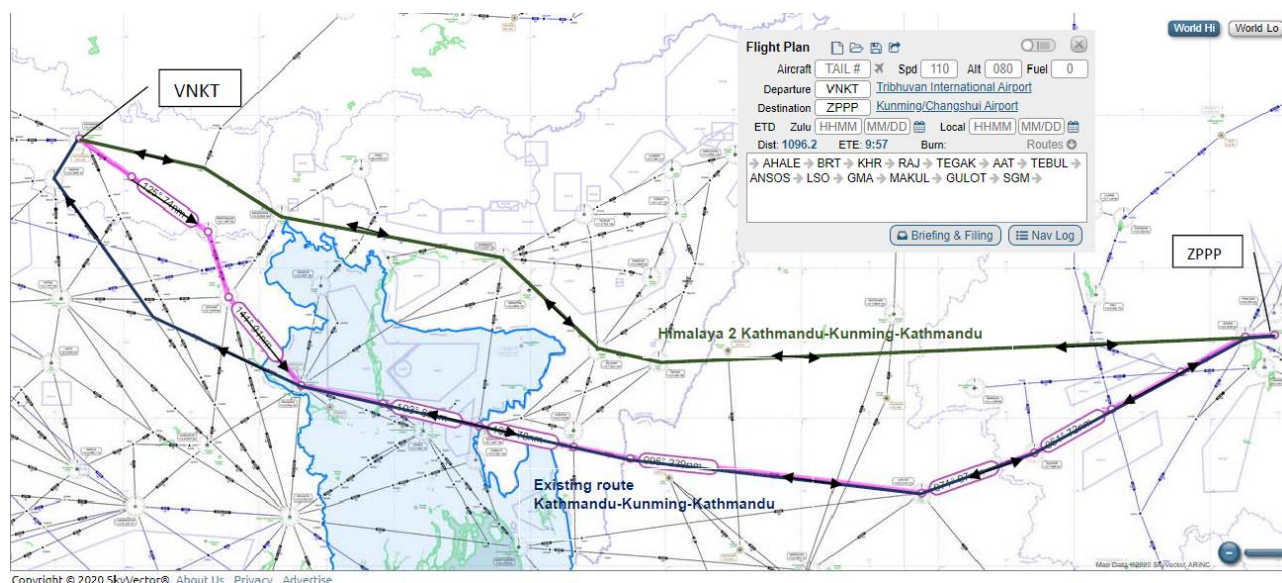
2.3.3 China has agreed to seriously review the Himalaya 2 route proposal (Ref. SEA RR/TF/4 report) and India has expressed the acceptance and opened the route within its territory (Ref. ICAO APAC Route Catalogue, Ver. 19). Nepal has been expressing its willingness to implement this route since long. In principle, Myanmar also agrees to implement this proposed route.

2.3.4 Detail benefits of the route in terms of distance, timing, fuel consumption and CO<sub>2</sub> emission have been tabulated below.

**Table 1. Benefits of Himalaya 2 route**

Sector	Present distance	Future distance on Himalaya 2	Round trip saving per flight per day				Round trip saving per flight per year	
			Saving distance	Time saving	Fuel saving @ 12.64 Kg/NM	Carbon emission reduced @ 3.16 Kg/Kg fuel	Total fuel saving	Total Carbon emission reduced
Kathmandu - Kunming	1096 NM	1001 NM	96 + 122 = 218NM	28 mins	2755kgs	8706 Kg	1005 tonnes	3178 tonnes
Kunming- Kathmandu	1123 NM	1001 NM						

### KATHMANDU - KUNMING



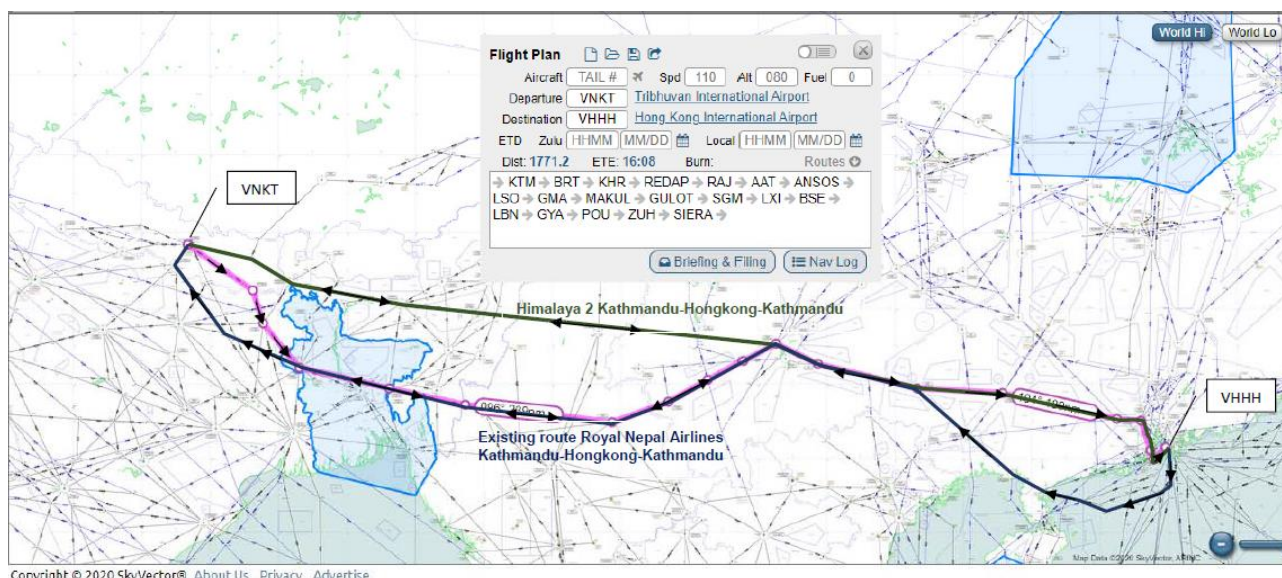
**Table 2. Comparison of two airlines operating on Kathmandu- Hong Kong sector and v. v.**

Airline Operators	Via Exiting Route:	Distance (NM)	Round Trips Distance (NM)
Nepal Airlines	<b>Kathmandu to Hongkong:</b> KTM-BRT-R344-RAJ-A201-AAT-A201B-ANSOS-A201 - LSO -A599-SGM-A599-ADBAG-A599-POU-R473-SIERA-DCT HKG	1770 NM	3664 NM
	<b>Hongkong to Kathmandu:</b> HKG-PECAN-V10-SIKOU-R339-BSE-A599-LINSO-A599-LSOA201 -ANSOS-A201B-AAT-A201 -RAJ-G463-ROMEO-DCT-KTM	1894 NM	
Dragon Air	<b>Kathmandu to Hongkong:</b> KTM-R344-RAJ-G463-CTG-B465-AKSAG-B465-LPB-A206-ASSAD-A202-DABUB-A202-SIKOU-V571 - CANTO-HKG	1868 NM	3805 NM
	<b>Hongkong to Kathmandu:</b> HKG-PECAN-V10-SIKOU-A202-SAMAS-A202-DABUB-A202-ASSAD-A206-LPB-B465-CTG-G463-ROMEO-DCT-KTM	1937 NM	

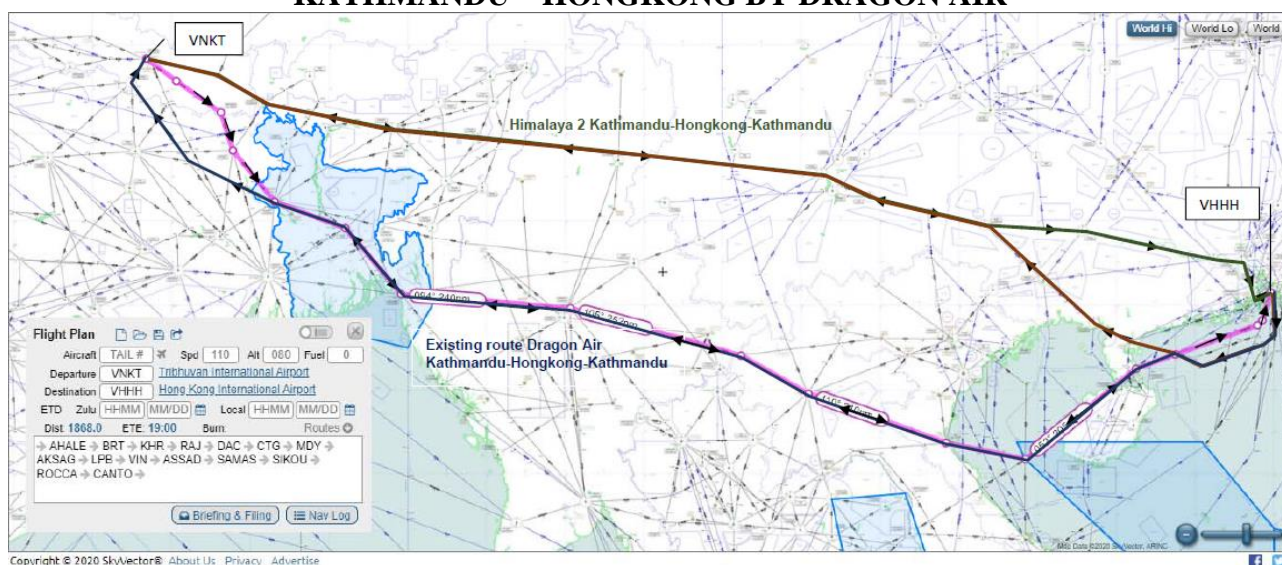
Via Proposed Himalyan-2 Route		Distance (NM)	Round Trips Distance (NM)
<b>Kathmandu to Hongkong:</b> KTM-G348-BGD-W137-GGT-W53-KKU-W55-IIM-SMGA599-ADBAG-A599-POU-R473-SIERA-DCT HKG		1676 NM	3441 NM
<b>Hongkong to Kathmandu:</b> HKG-PECAN1B-PECAN-V10-SIKOU-R339-BSE-A599-SGM-IIM-W55-KKU-W53-GGT-W137-BGD-G348-KTM		1765 NM	

Benefit of Himalyan-2 route :						
Himalaya 2 route	Distance Saved (NM)	Time Saved @ speed 470 Kts	Round trip saving per flight per day		Round trip saving per flight per year	
			Fuel saved @ 12.64 Kg/Nm	Carbon emission reduced @ 3.16Kg/Kg fuel)	Total fuel saving	CO2 saving
Per round trip flight of Nepal Airlines	223 NM	20min	2819 Kg	8909 Kg	1028 tonnes	3251 tonnes
Per round trip of Dragon Air	364 NM	50min	4601 Kg	14539 Kg	1679 tonnes	5306 tonnes

### KATHMANDU- HONGKONG BY ROYAL NEPAL AIRLINES



### KATHMANDU – HONGKONG BY DRAGON AIR



Note 1: Amount of fuel burn and carbon emissions as mentioned in the above tables are calculated for the concerned sectors using ICAO carbon emission calculator. (<https://www.icao.int/environmental-protection/Carbonoffset/Pages/default.aspx>)

Note 2: Calculations are done for aircraft category A320/A333.

### 3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) discuss means of support for the long awaited initiative aimed at enhancing safety and efficiency of aircraft operation and protecting the environment; and
- c) discuss any relevant matters as appropriate.

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# NEED FOR EFFECTIVE IMPLEMENTATION OF HIMALAYA 2 ROUTE

Jointly Presented by Nepal and Myanmar

# 1. INTRODUCTION

- The development of Himalaya 2 route along the southern slope of Himalayas stretches as a part of EMARSSH project in 2002.
- Nepal has been proposing this route in different ICAO forums for almost two decades.
  - ICAO APAC DGCA/56 (2019),
  - APANPIRG/25 (2014),
  - ICAO A38 (2013) and
  - ICAO APAC DGCA/42 (2005).

- APAC Region has been experiencing tremendous air traffic growth.
  - Resulting congestion over Bay of Bengal.
  
- Once Himalaya 2 route will be implemented, it will help in:
  - decongesting the air traffic flows over the Bay of Bengal and over LSO in Myanmar FIR
  - optimizing airspace use of Nepal, India, Myanmar and China.
  - benefiting the global aviation community if connected with L626 linking East Asia, Middle East and Europe.
  
- High time to implement the proposed Himalayan-2 route through further enhancement in en-route CNS capacity.

## 2. DISCUSSION

### Need of implementation of Himalaya 2 Route

- Round trip distance saving in Kathmandu-Kunming sector by about 218 nm.
- Round trip distance saving in Kathmandu-Hong Kong sector by about 220 nm to 360 nm.
  - Existing routes being used by Nepal Airlines and Hong Kong Dragon Air have been taken into consideration.
- DCA Myanmar in 1<sup>st</sup> Nepal-Myanmar ATM Coordination meeting held in Yangon on 31<sup>st</sup> October – 01<sup>st</sup> November 2019 agrees to implement the Himalaya 2 route structure as mentioned in ICAO route catalogue.
  - For this, DCA Myanmar will plan to install new surveillance system and RCAG VHF station at Myitkyina Airport by FY 2021/2022.

➤ Nepal and Myanmar jointly requests concerned States and IATA to review and upgrade their priority for the Himalaya 2 route and ICAO to depict accordingly in APAC Route Catalogue taking into consideration of State consent and the route benefits.

- India has accepted and opened the route within its territory (Ref. ICAO APAC Route Catalogue, Ver. 19)
- China has agreed to seriously review the route proposal (Ref. SEA RR/TF/4 report).
- China and other stakeholders are further requested to expedite the process of implementing the route proposal for greater efficiency and sustainability of operations in this COVID situation.

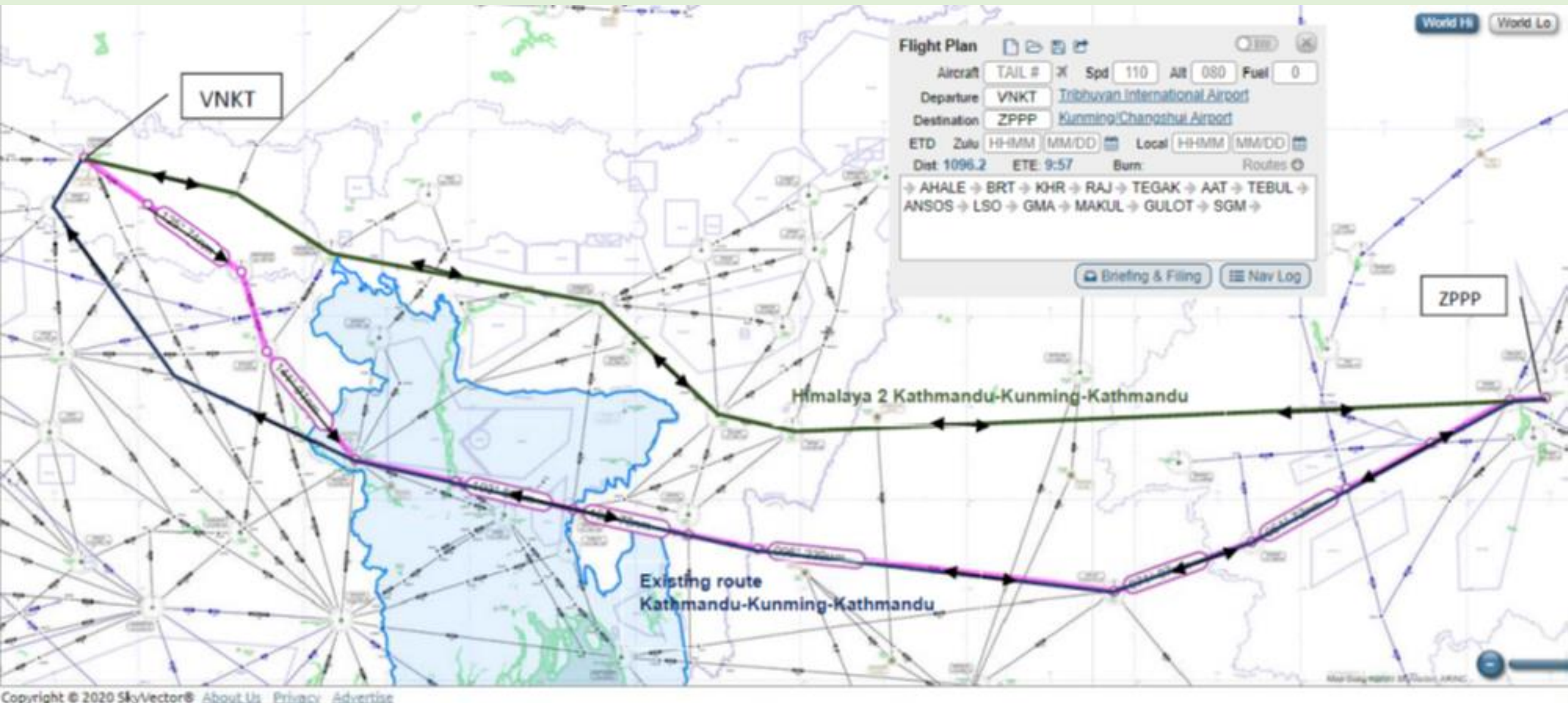
## ➤ Further benefits of the route

- Round trip flight distance saving by about 220 nm
- Round trip time saving by about 30 min,
- Round trip reduction in fuel burn by around 2755 kg
- Round trip reduction in CO<sub>2</sub> emission by 8706 kg, support in protecting the environment.

**Table 1. Benefits of Himalaya 2 route**

Sector	Present distance	Future distance on Himalaya-2	Round trip saving per flight per day				Round trip saving per flight per year	
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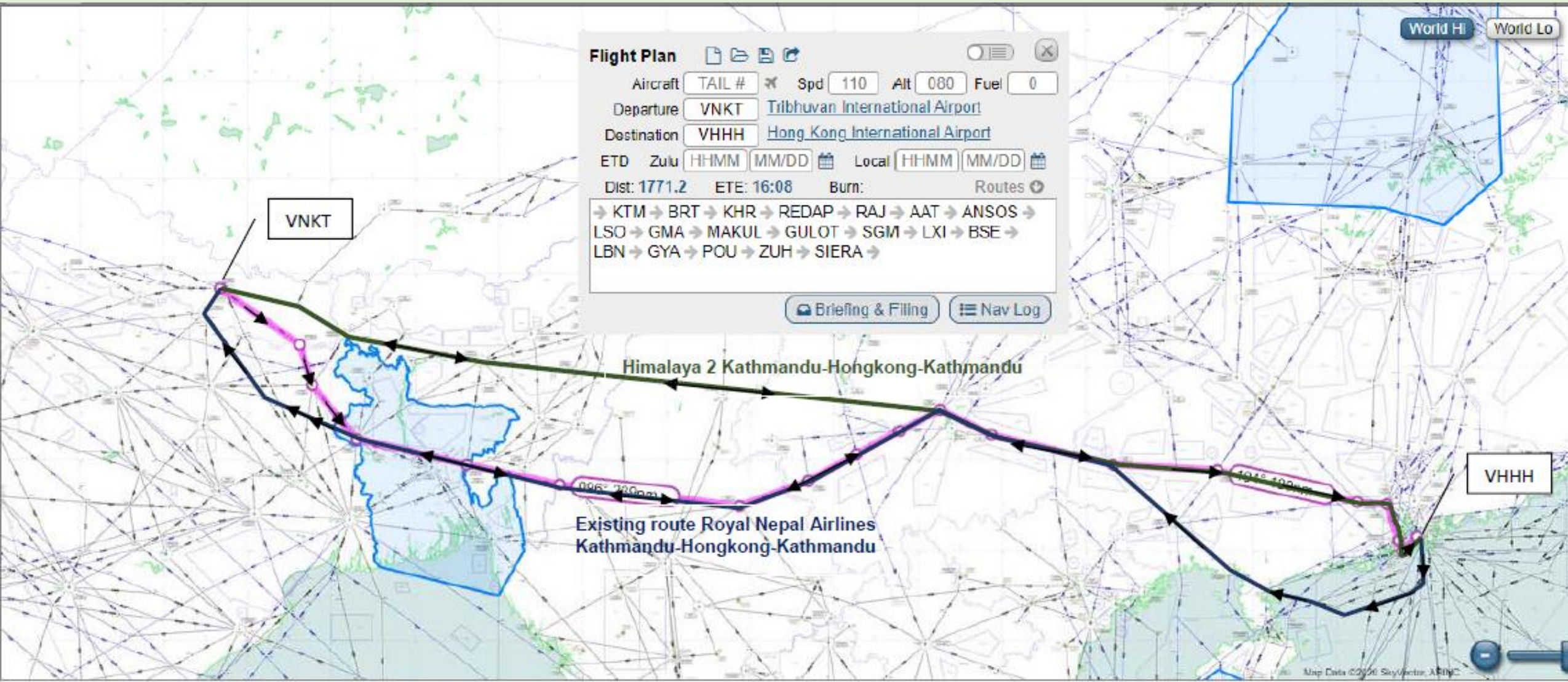
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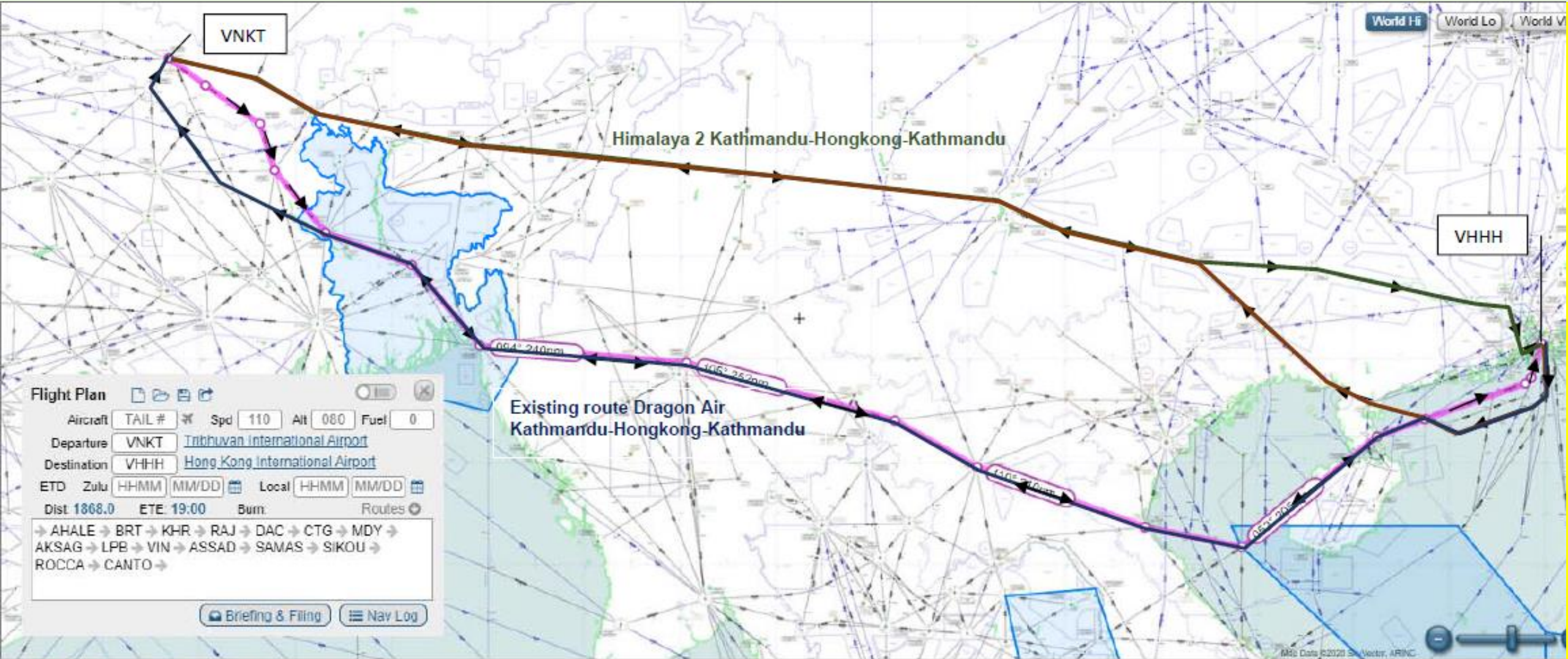
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