SAIOSEACG/2 MEETING 20 March 2023

CONCEPT REVIEW OF SOUTH CHINA SEA AIRSPACE

IFATCA

1

The South China Sea Airspace Timeline

2002

- **The South China Sea (SCS) airspace was totally revised for the implementation of RVSM.**
- **Three primary traffic flows were identified and parallel RNAV10 routes introduced.**
- **These routes used a non-standard modified Flight Level Orientation System (FLOS)**
- **All other routes used the ICAO Annex 2 Standard flight level system.**
- **FLOS is only applicable within SCS airspace – therefore controllers have to transition flights as they enter or leave the area at the Fukuoka, Manila or Taipei FIR boundary.**
- **The SCS routes used a complex Flight Level Allocation System (FLOS) to remove the need for prior ATC coordination on final cruising levels.**

2012

- **The SCS traffic count had increased by 50% compared to the 2002 figure.**

2019

- **The traffic count had increased by almost four fold compared to the 2002 figure.**

2022

- **The South China Sea Traffic Flow Review Group requested meeting members to '*study and review the current SCS FLAS/FLOS operation with all neighboring FIRs with a view to enhancing efficiencies*'.**

The South China Sea Airspace Timeline

2023

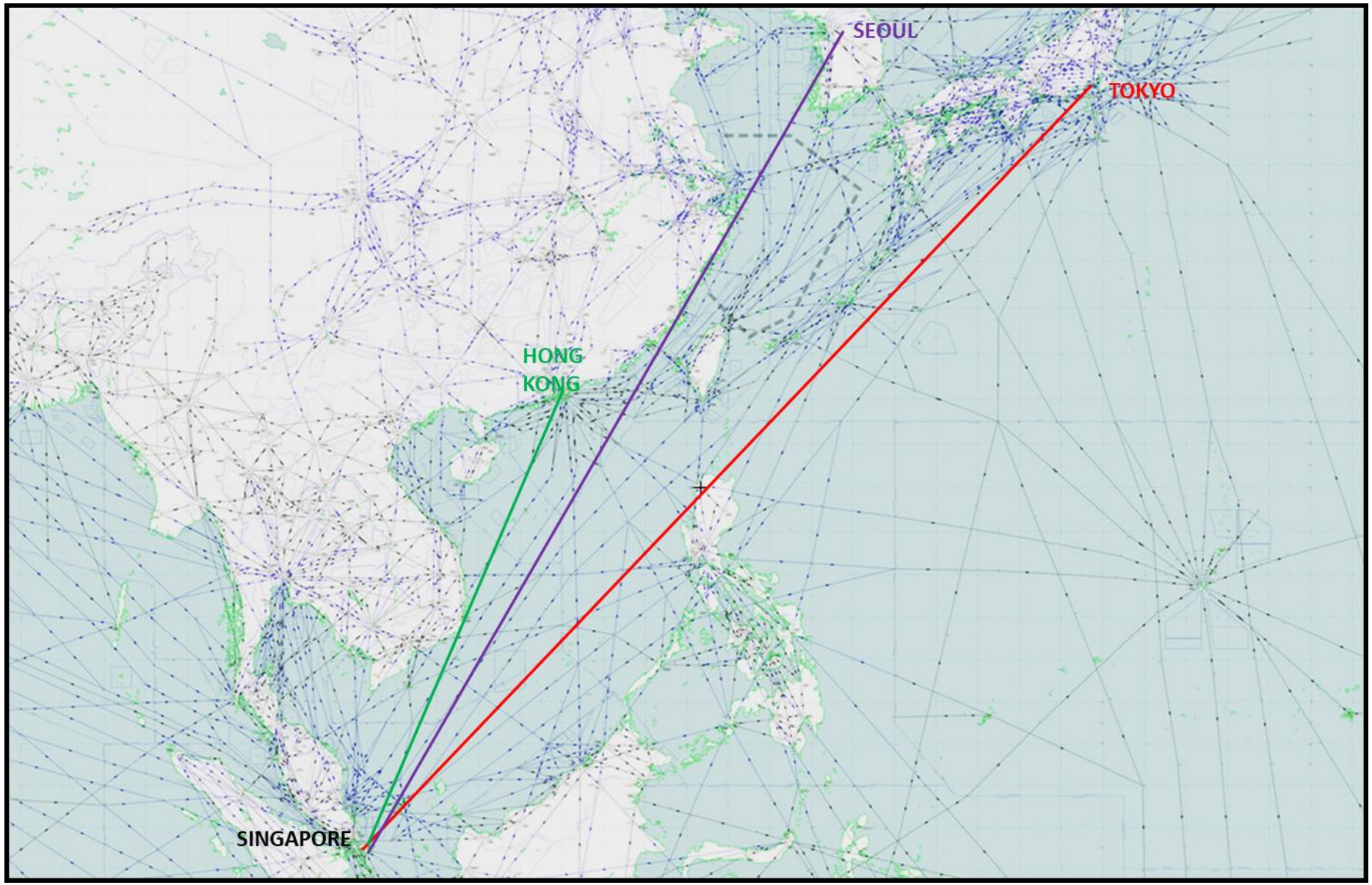
- **A review of the FLOS/FLAS has to involve a review of the SCS airspace structure that was introduced twenty years ago and based on procedures that were appropriate for much of the SCS airspace that was under procedural control.**
- **The application of RNP4 or RNP2 procedures in accordance with ICAO Asia Pacific Seamless ANS Plan using the present airspace structure would provide some increase in route capacity, but it would be a very poor utilization of airspace and ignore the pressing environmental issues of reducing fuel burn and CO^2 emissions.**
- **The removal of the SCS FLOS will relieve the controllers of the transition task for half of the flights on the respective routes and enable them to provide a more efficient service to all airspace users.**

202 ?

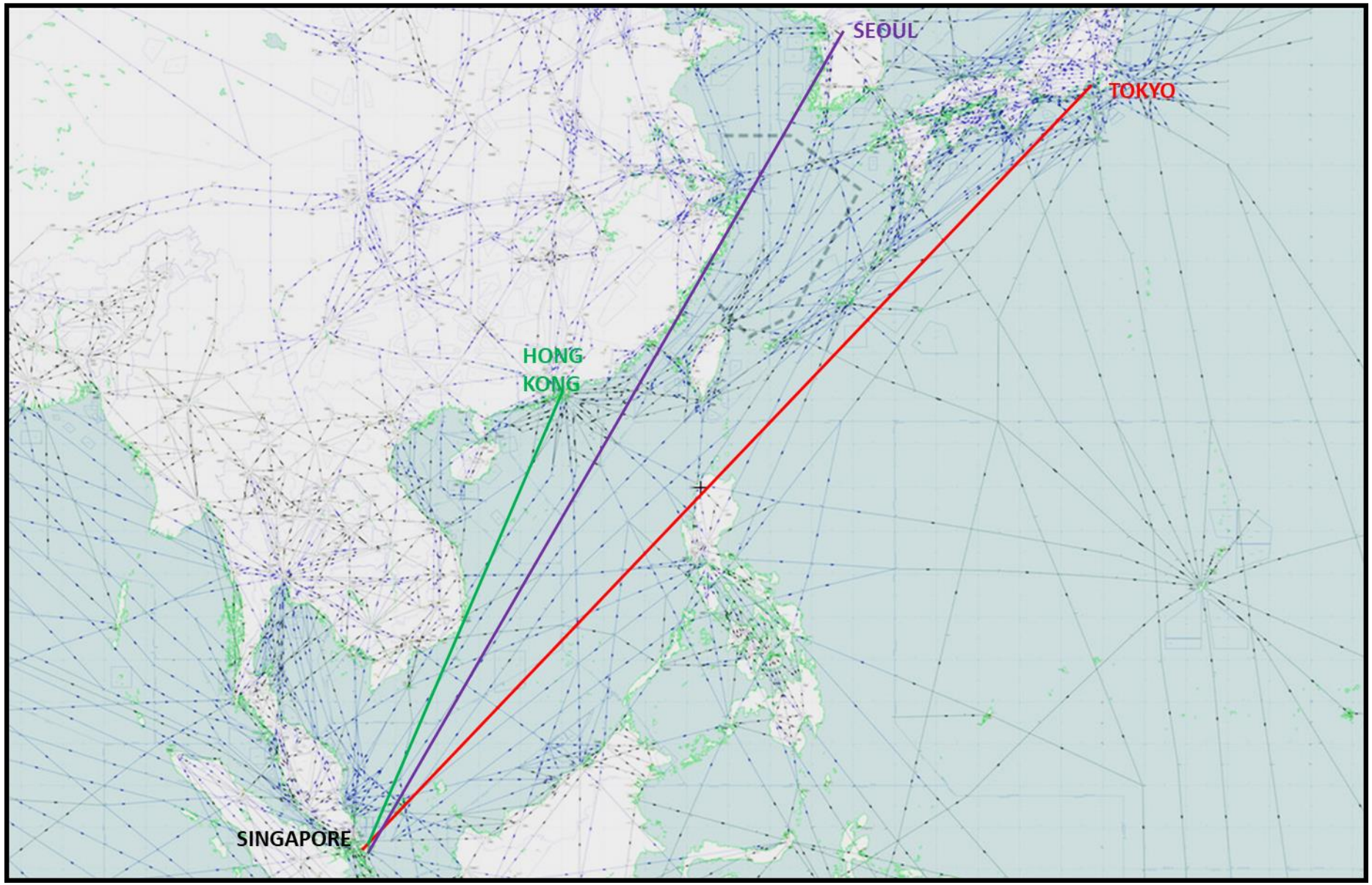
- **In the coming years there will be many significant changes to the way flight information is handled and ATM can be applied. Without an efficient and effective airspace structure in place the region will not be able to benefit from these major changes.**

Concept Review of South China Sea Airspace

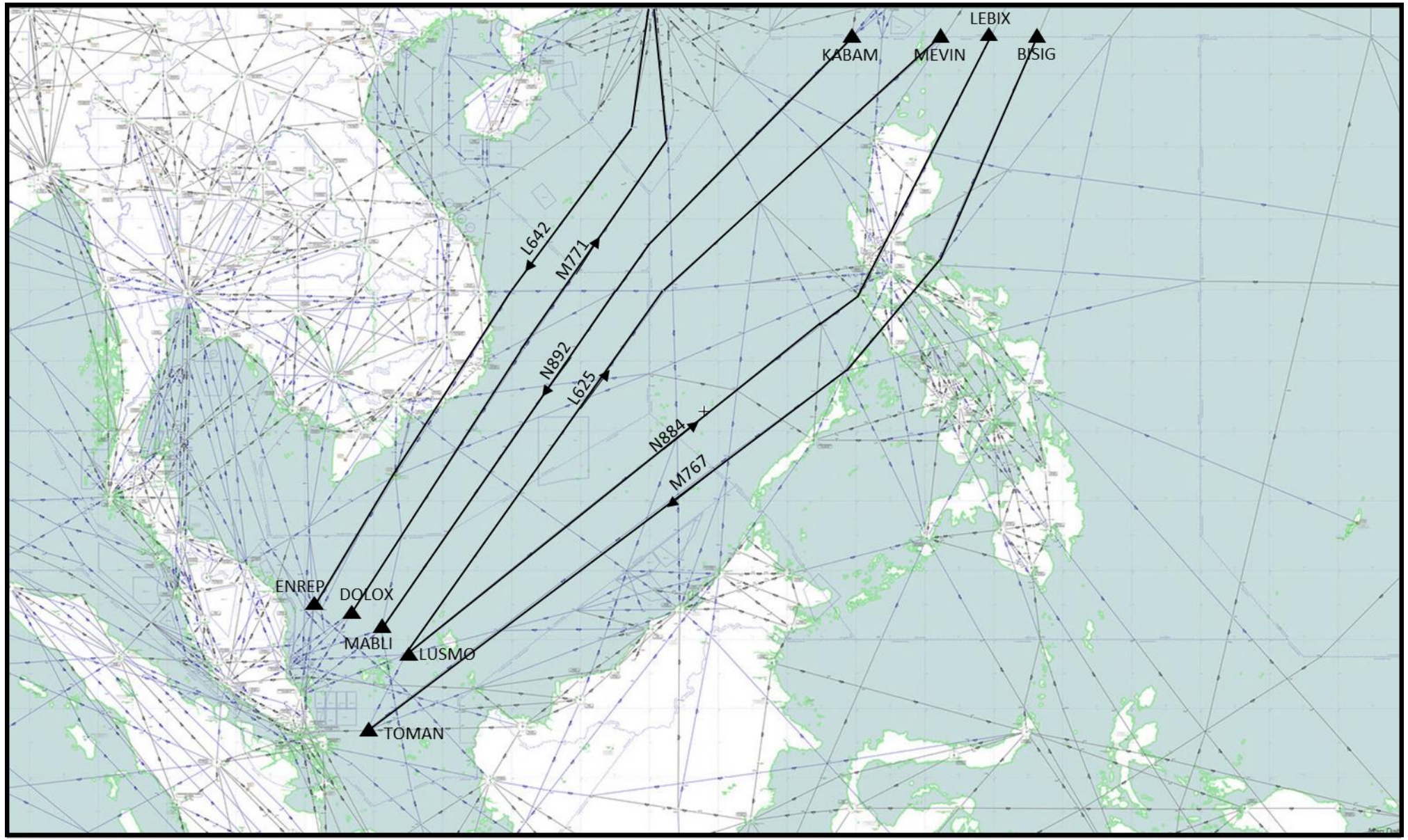
2001 Concept of Three South China Sea Primary Routes



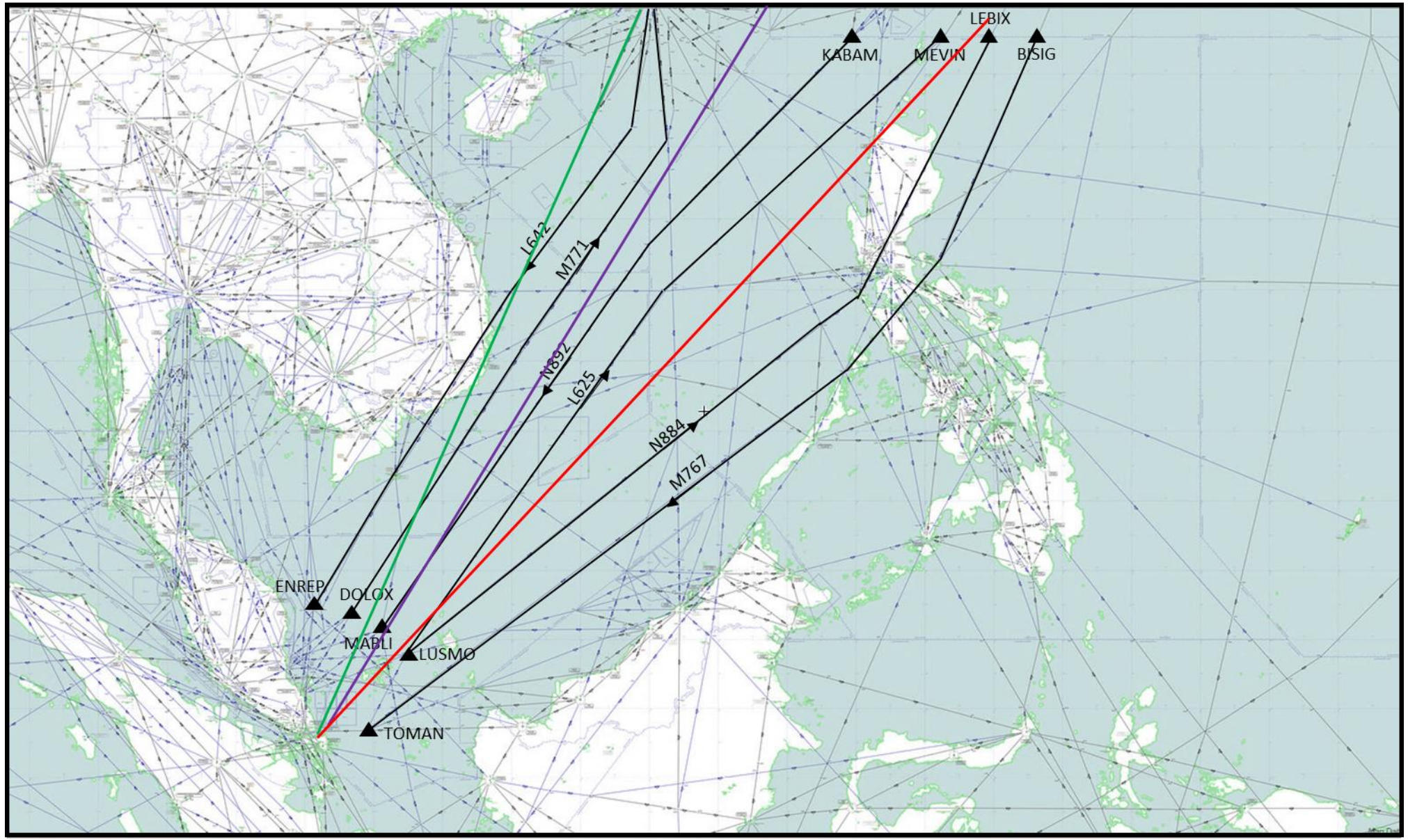
2001 Concept of Three South China Sea Primary Routes



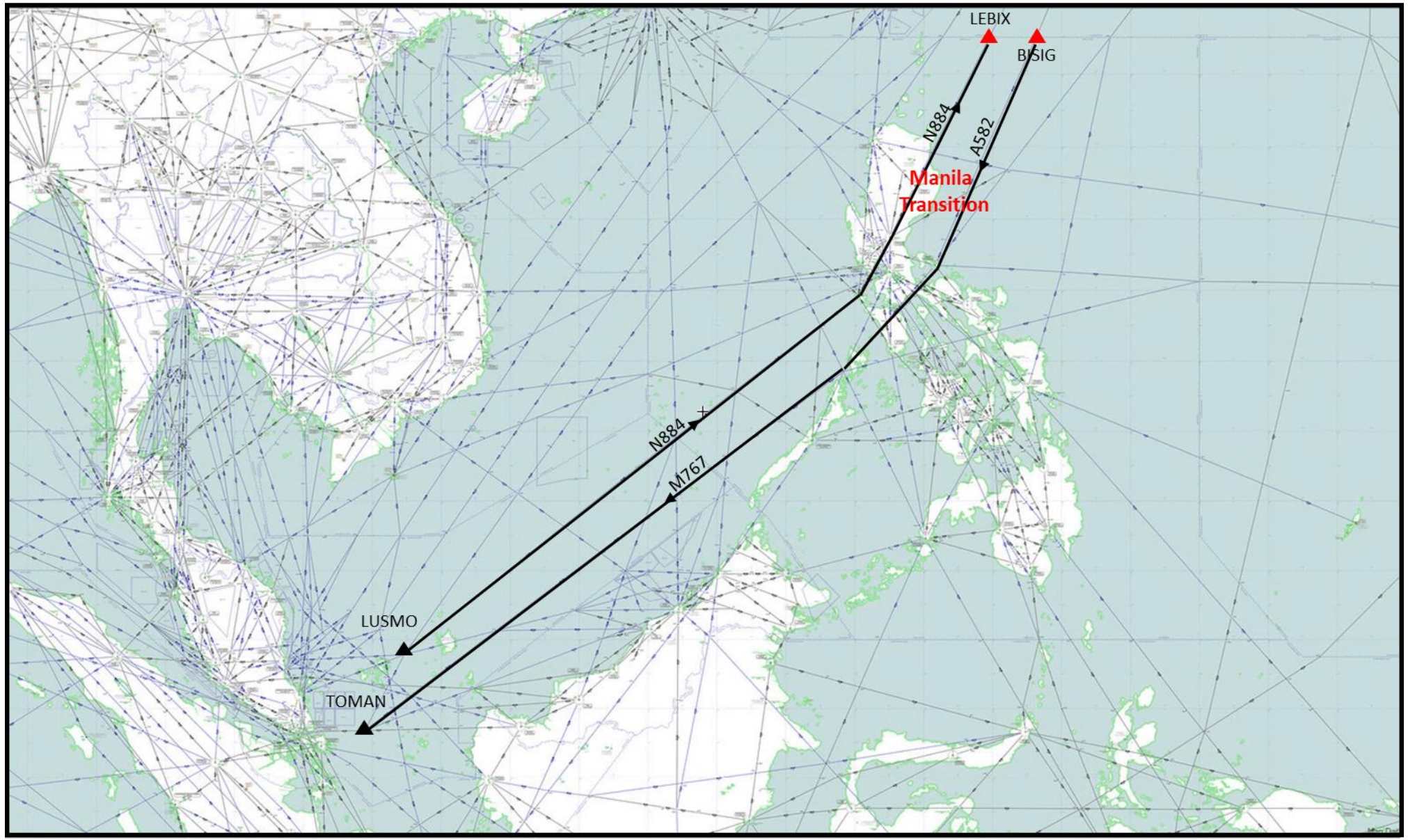
2002 South China Sea Three Primary Parallel RNAV10 Routes



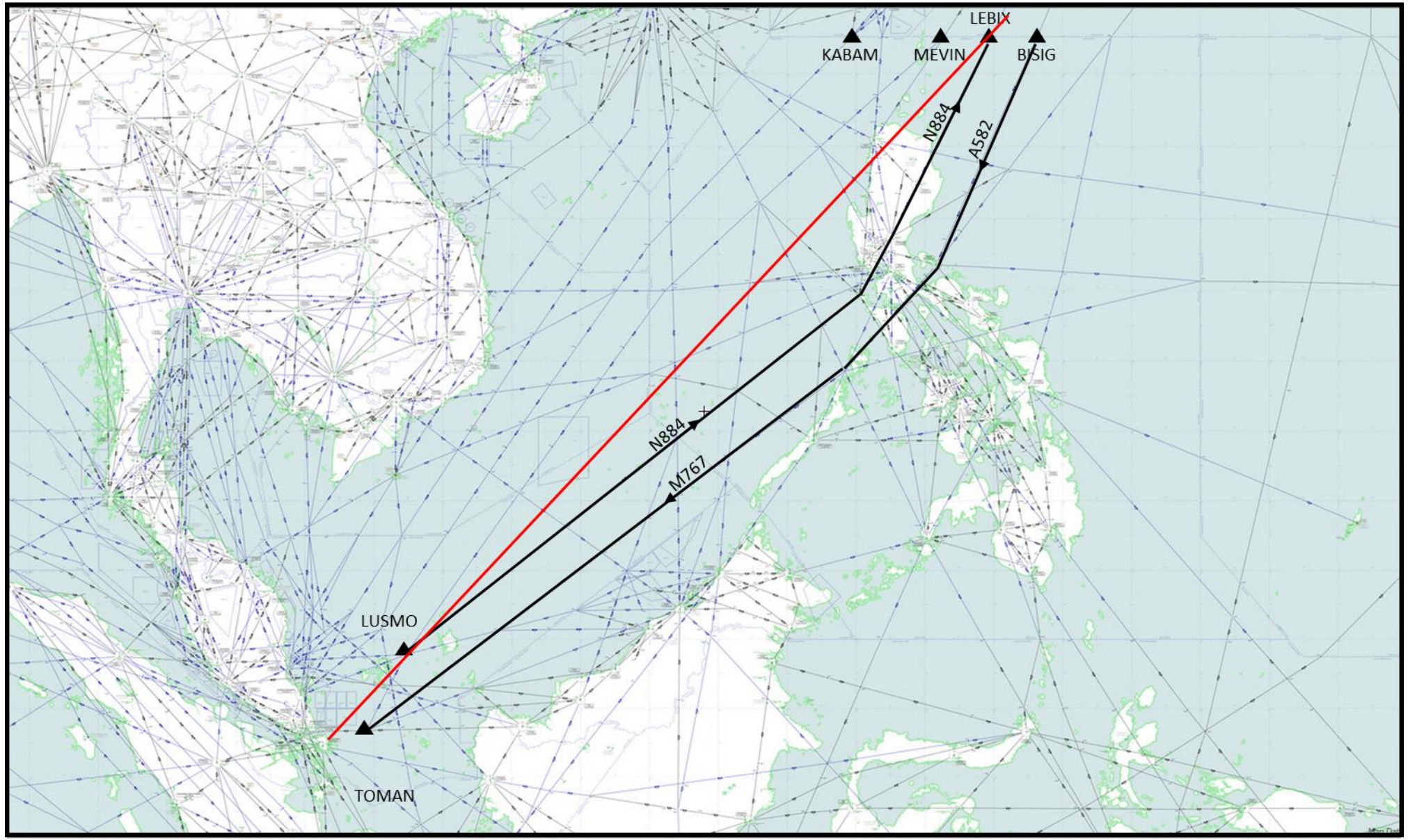
2002 South China Sea Three Primary Parallel RNAV10 Routes



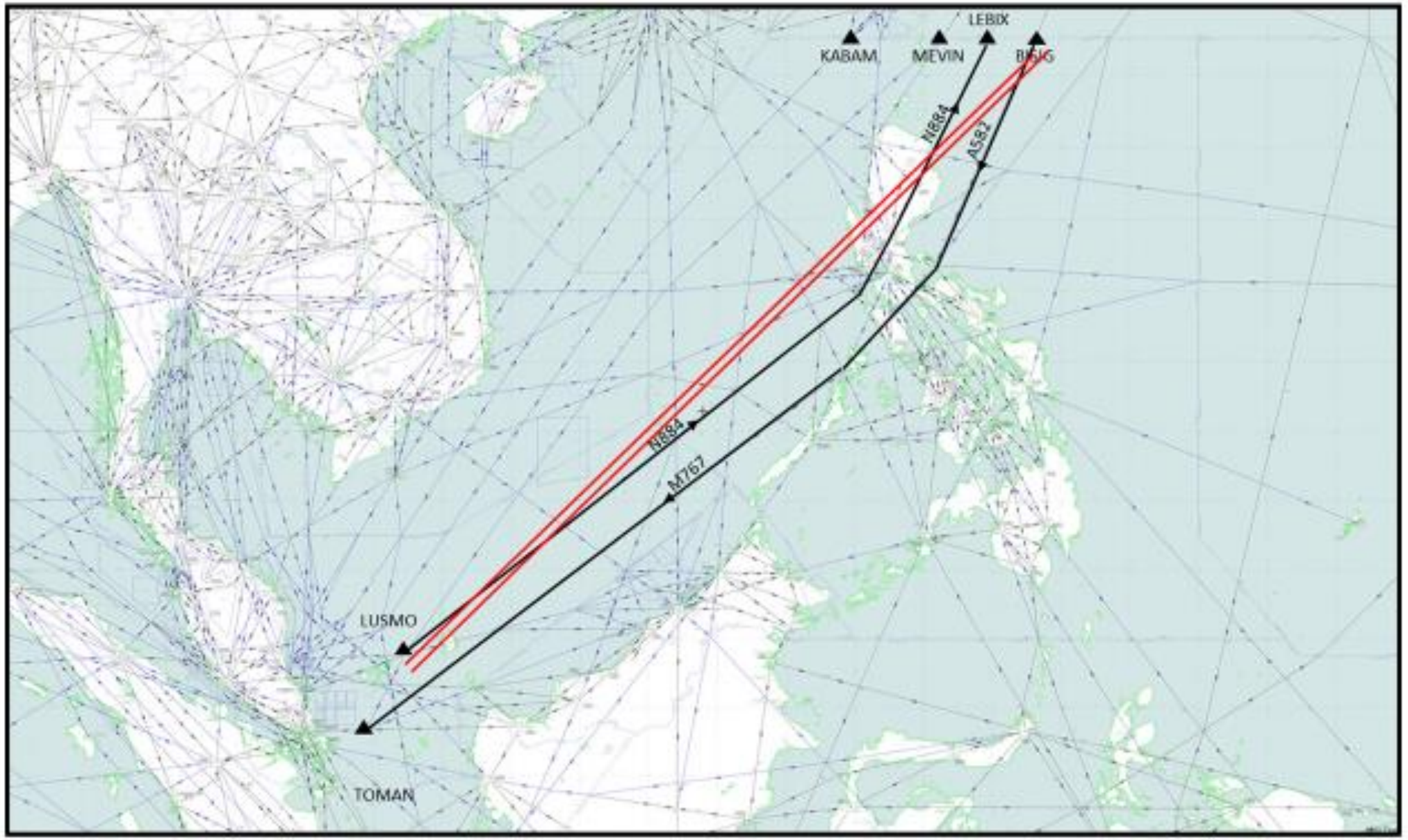
2022 Primary Parallel RNP4 Route Tokyo-Singapore



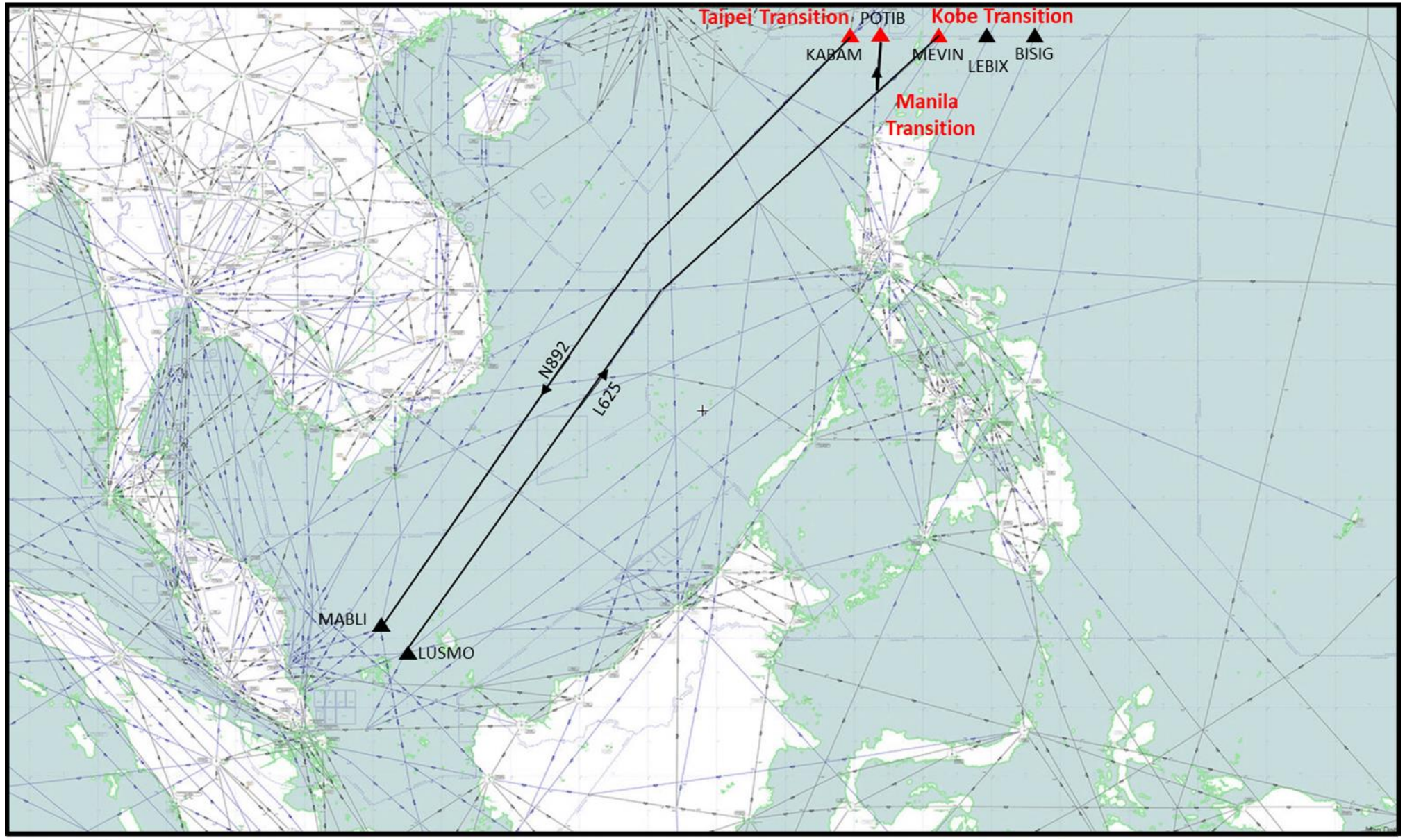
2023 Primary Parallel RNP4 Routes and Direct Track



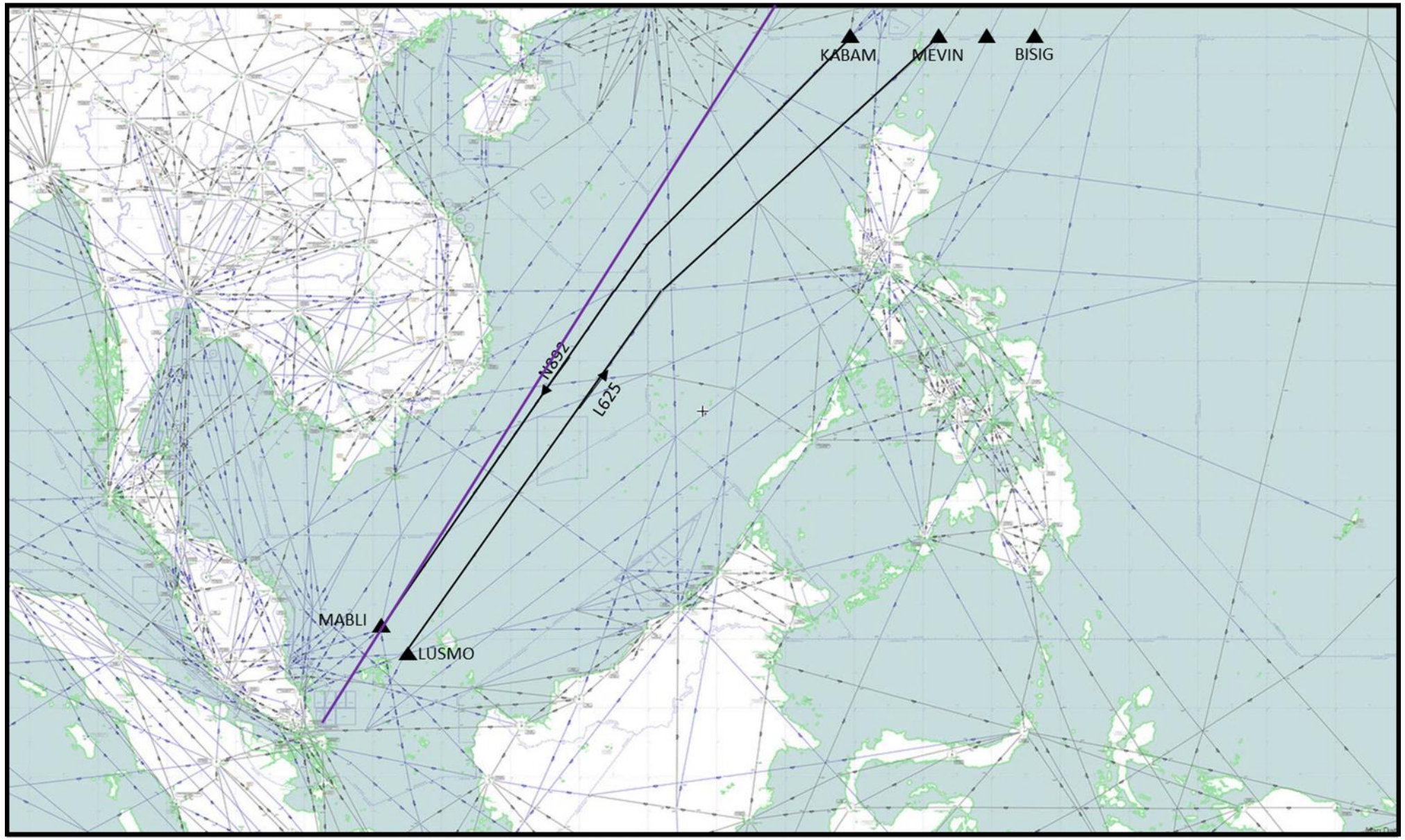
Phase 1 Parallel RNP2 Routes



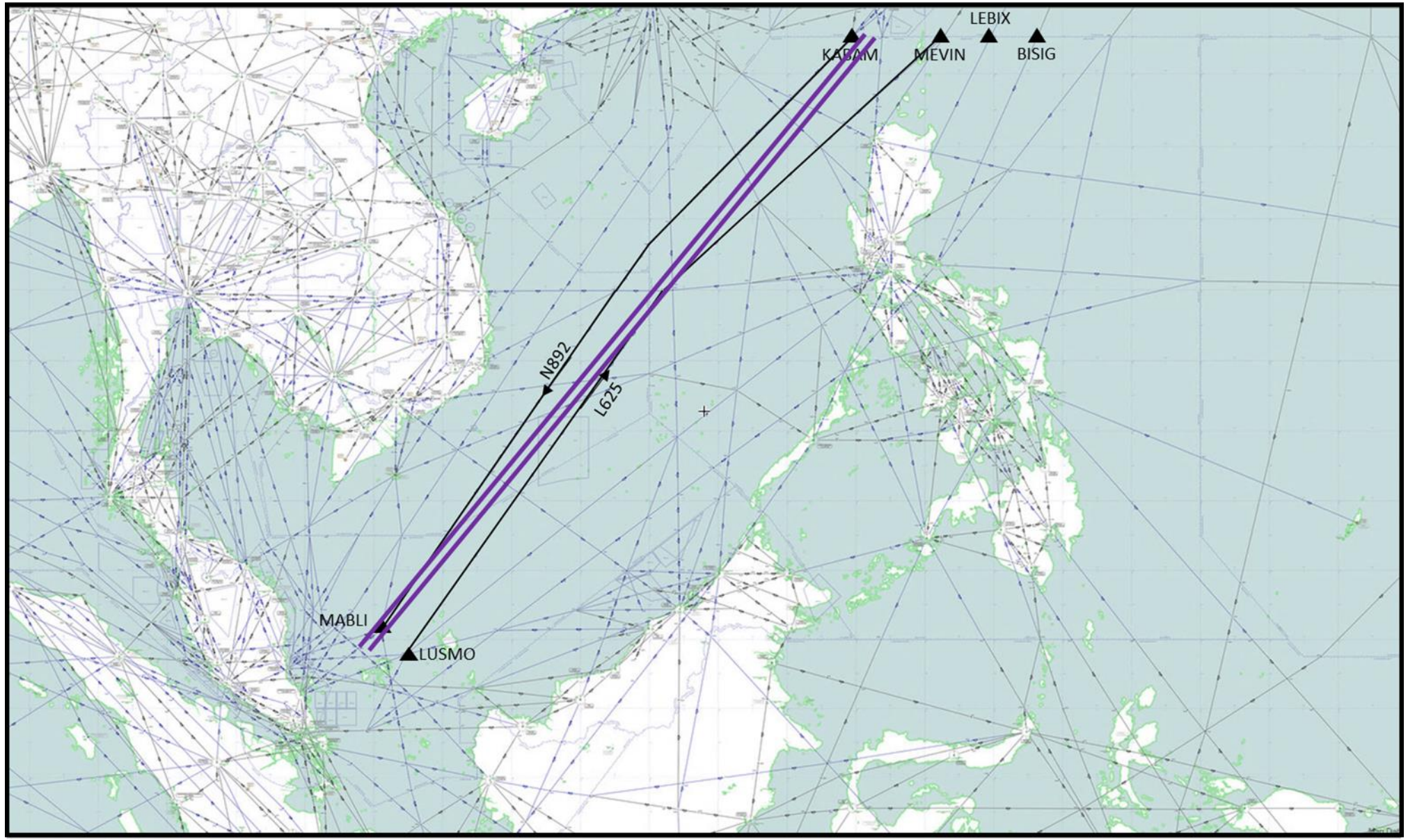
2022 Primary Parallel RNP10 Routes Seoul-Singapore



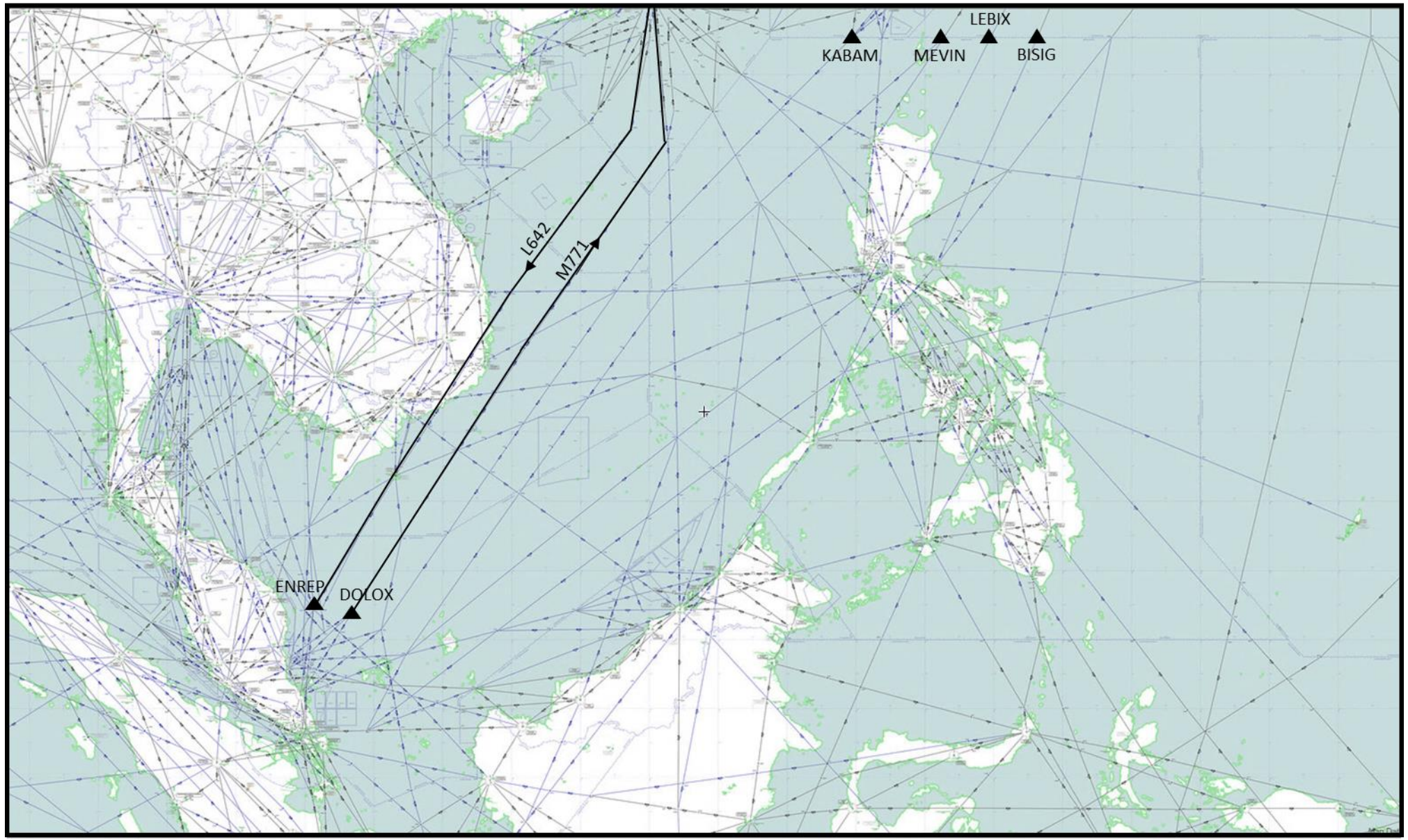
2023 SCS Primary Parallel RNP10 Routes and Direct Track



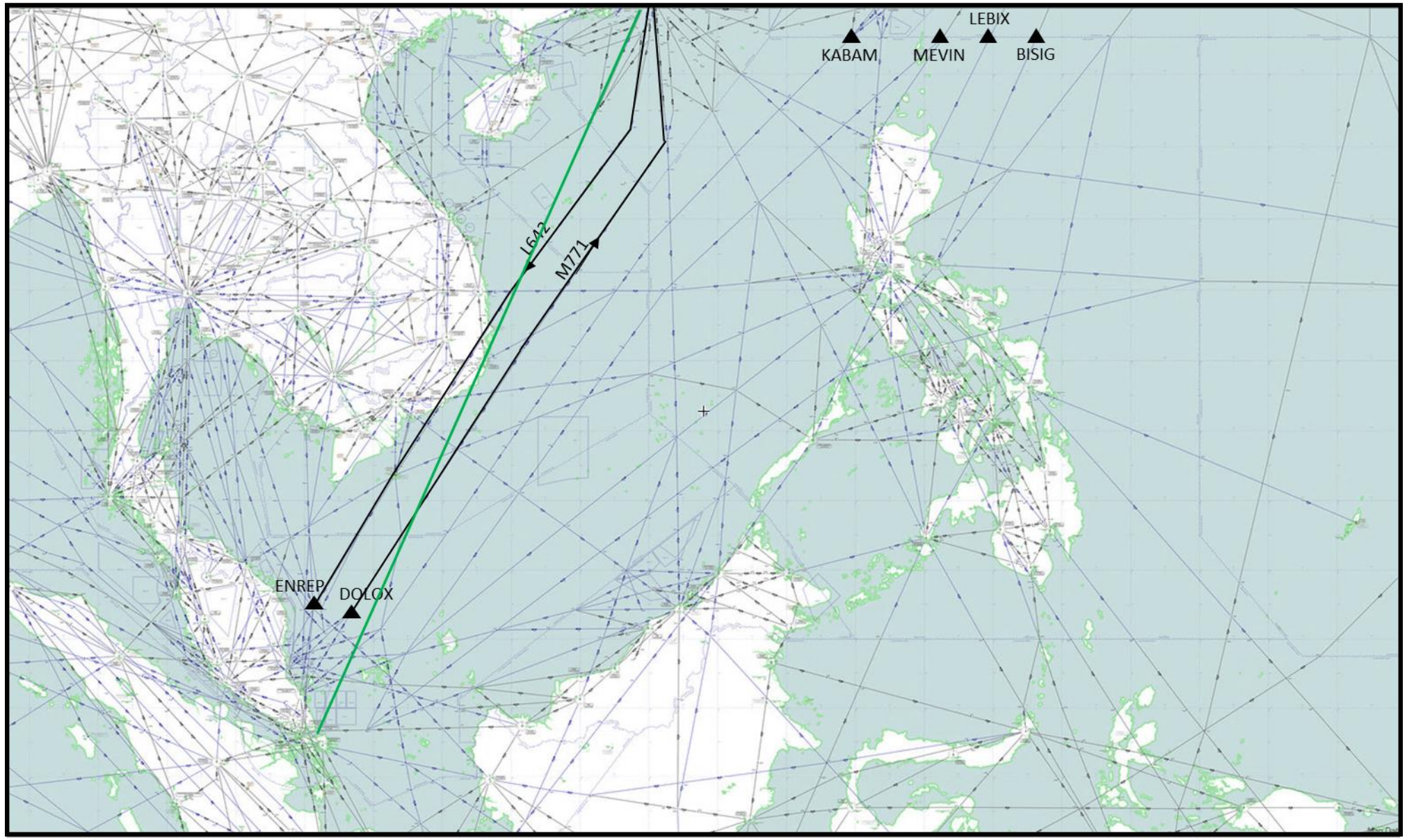
Phase 2 Parallel RNP2 Routes



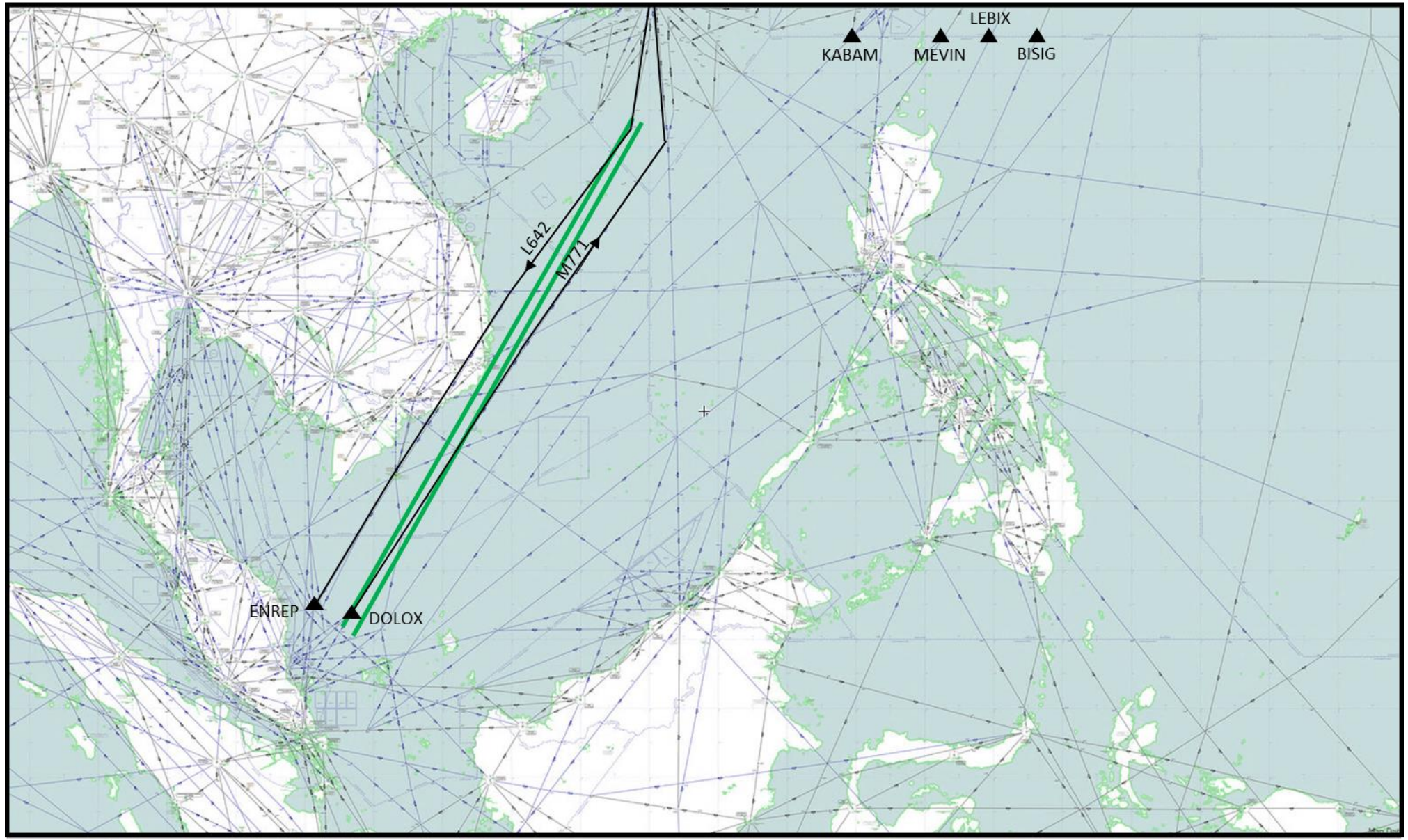
2023 Primary Parallel RNP4 Routes Hong Kong-Singapore



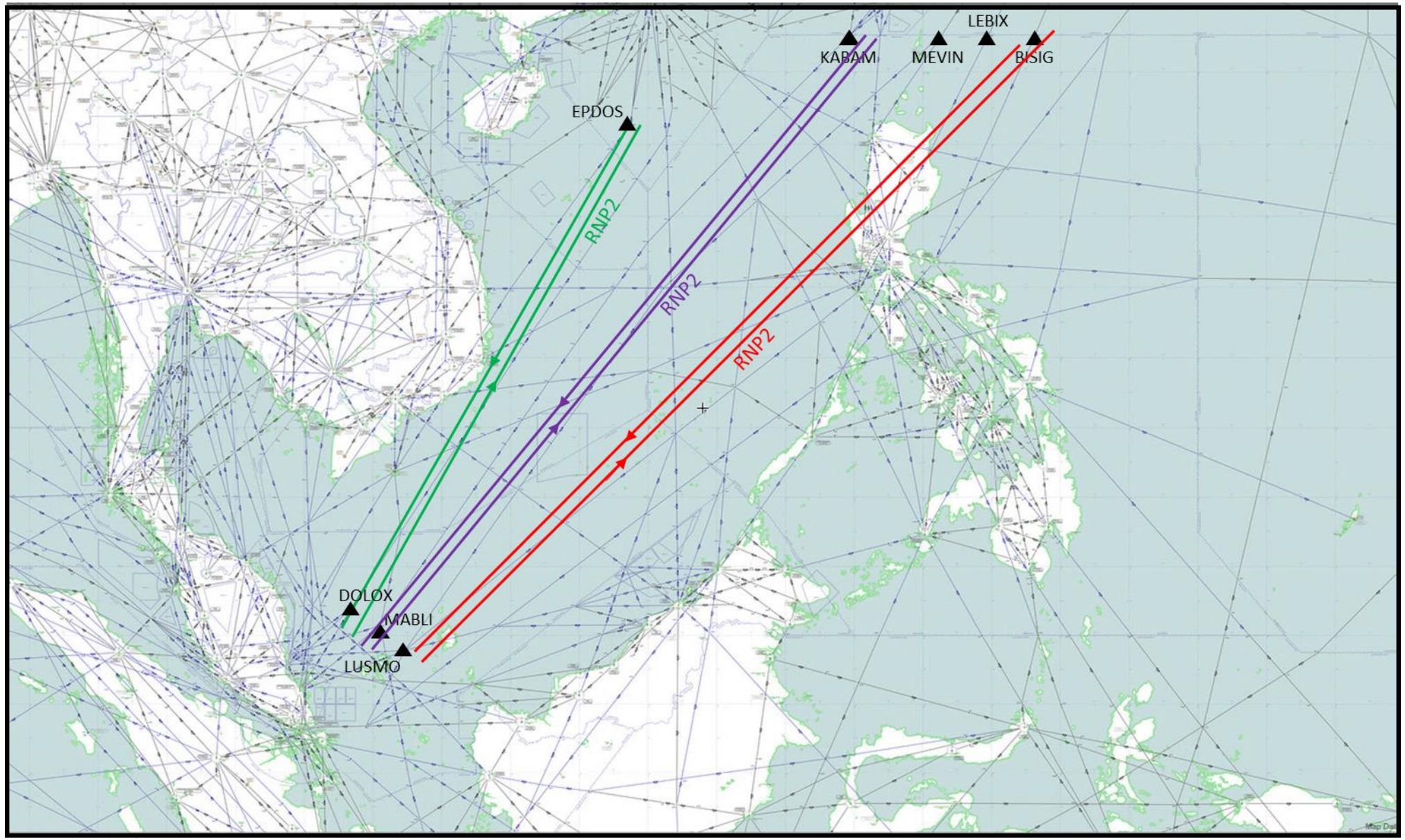
2023 Primary Parallel Routes and Direct Track



Phase 3 Parallel RNP2 Routes Hong Kong-Singapore



Phase 3 South China Sea Parallel RNP2 Routes



Concept Review of South China Sea Airspace

- Airspace structure based on ICAO Standard procedures
- Airspace structure compliant with Asia Pacific Seamless ATS Plan
- Removal of non-standard FLOS reduces controller workload
- Removal of FLAS provides more efficient use of airspace
- Less fuel burn with improved allocation of optimum cruising levels
- Reduction in environmental emissions