

# ALPHA ZULU RoPAC

## A Phased Regional Maritime Connectivity Mesh

**Submission for Institutional Support and Facilitation**

**CARICOM Secretariat, OECS Commission and  
Barbados Maritime Transport Administration**

Champion Maritime Limited

Barbados

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*“The sea is our highway.”*

# Executive Summary

Champion Maritime Limited proposes a phased Caribbean-owned and operated scheduled maritime network comprising six complementary weekly round trips linking Guyana, Trinidad, Grenada, Saint Vincent and the Grenadines, Saint Lucia, Barbados, Dominica and Antigua. Barbados is the principal interchange hub, with additional transfers at shared ports. The programme is designed around purpose-built Alpha Zulu RoPAC trimaran vessels using wind as the primary source of propulsive energy, supported by onboard renewable generation, battery energy storage and electric propulsion for schedule reliability.

The programme does not begin by asking the region to assume unproven cargo demand. During the first 18 months, sail cargo vessel S.V. RUTH together with borrowed Trinidad Cari-Cargo fossil fueled ferry capacity would establish and validate the market while Alpha Zulu 1 is constructed and commissioned. The pilot phase is intended to generate real evidence of cargo volumes, freight rates, customer retention, port turnaround, schedule performance and forward demand.

The conservative production case commissions Alpha Zulu 1 at Month 18, Alpha Zulu 2 at Month 30, Alpha Zulu 3 at Month 36, Alpha Zulu 4 at Month 40, Alpha Zulu 5 at Month 44 and Alpha Zulu 6 at Month 48. The sixth-vessel date extends the existing four-month serial-build assumption. Each vessel is assigned one proposed weekly round trip. The first three vessels establish the initial interconnected network; vessels 4–6 extend Windward coverage, add a second Guyana connection and establish the direct Guyana–Trinidad breadbasket shuttle.

The Barbados Maritime Transport Administration (BMTA) is included as a principal national implementation and facilitation counterpart. Its role is distinct from the regional political and institutional roles sought from the CARICOM Secretariat and OECS Commission: BMTA engagement is directed toward maritime-administration, technical and regulatory facilitation, and continued support for engagement with development-finance and strategic partners. Such engagement is not represented as a Government of Barbados funding commitment, financing guarantee or endorsement of any particular financing structure.

This timetable is deliberately conservative. It is a base-case production sequence, not a technical ceiling. If demonstrated demand, regional urgency, financing or institutional support warrants faster deployment, multiple vessels can be constructed concurrently through parallel production workstreams, additional tooling, expanded workforce and supply-chain capacity, and potentially multiple regional commissioning locations.

## 1. Purpose of this Submission

Champion Maritime seeks the formal support of the CARICOM Secretariat and OECS Commission, together with the continued implementation and facilitation engagement of the Barbados Maritime

Transport Administration (BMTA), for a phased regional maritime connectivity programme that is intended to:

- establish reliable scheduled intra-regional cargo and passenger connectivity;
- strengthen regional food security and agricultural market access;
- reduce dependence on imported fossil fuel for inter-island marine transport;
- create Caribbean-owned, built and operated maritime capacity;
- develop a practical scheduled mesh rather than a collection of isolated and fragmented aging conventional tonnage and ad hoc tramp routes; and
- provide an investable implementation pathway capable of scaling as demonstrated demand grows.

## **2. Operating Concept: From Routes to a Mesh**

The operating principle is that no vessel schedule should be optimized in isolation. Common ports become interchange nodes, allowing palletised cargo and passengers to move through the network without requiring every vessel to call at every island. Each of the six routes targets one complete round trip per week. Planning uses an 0800–1400 cargo/passenger handling window and departures around 1700 where practical, with overnight passages and staggered connections. Firm passage times and departure days remain subject to route-specific P90 reliability analysis, vessel performance validation and port arrangements.

Weekly service is a proposed operating target, not a validated timetable. The six round trips range from approximately 470 to 1,010 nautical miles. Passage planning must allow for loading and discharge, transfers, weather, maintenance and recovery time. Electric propulsion is reserved for schedule support within the verified energy budget; favourable sailing performance provides recovery margin rather than justification for tightening the published timetable.

## **3. Market Proof Before Purpose-Built Fleet Deployment**

Months 0–18 are a deliberate market-validation period. The ZeroFF sail cargo vessel S.V. RUTH and CARICOM proposed borrowed Trinidad Cari-Cargo ferry capacity would operate initial services while Alpha Zulu 1 is under construction. Their purpose is to prove demand, not to prove Alpha Zulu vessel performance. The pilot vessels establish the commercial evidence base; the Alpha Zulu engineering programme, VPP and sea trials separately validate the purpose-built vessel.

The pilot phase should measure tonnes and pallets carried, load factors, freight yield, customer retention, port turnaround, schedule adherence, seasonal demand, cargo imbalance, forward bookings and shipper commitments. This reduces the risk of asking investors simultaneously to finance an unproven market and a new vessel class.

## 4. Conservative Fleet Deployment Programme

| Stage            | Entry       | Asset                                          | Primary role                                                                          |
|------------------|-------------|------------------------------------------------|---------------------------------------------------------------------------------------|
| Market proof     | Months 0–18 | S.V. RUTH + borrowed Trinidad Cari-Cargo ferry | Validate demand, rates, cargo systems and schedules                                   |
| Phase 1          | Month 18    | Alpha Zulu 1                                   | Guyana–Barbados–Dominica–Barbados–Guyana; weekly                                      |
| Phase 2          | Month 30    | Alpha Zulu 2                                   | Trinidad–Grenada–SVG–Saint Lucia–Barbados–Trinidad; weekly                            |
| Phase 3          | Month 36    | Alpha Zulu 3                                   | Barbados–Dominica–Antigua–Dominica–Barbados; weekly; initial three-vessel network     |
| Phase 4          | Month 40    | Alpha Zulu 4                                   | Barbados–Saint Lucia–SVG–Grenada–SVG–Saint Lucia–Barbados; weekly                     |
| Phase 5          | Month 44    | Alpha Zulu 5                                   | Guyana–Trinidad–Grenada–SVG–Guyana; weekly                                            |
| Phase 6          | Month 48    | Alpha Zulu 6                                   | Guyana–Trinidad–Guyana; weekly; completes six-route proposal                          |
| Serial expansion | Thereafter  | Alpha Zulu 7+                                  | Maintenance cover, increased frequency or future routes; four-month base-case cadence |

## 5. Six Proposed Weekly Routes

### 5.1 Alpha Zulu 1 Mainland Hub and Northern Link

Guyana → Barbados → Dominica → Barbados → Guyana. Approximately 1,010 nautical miles and four sailing legs per weekly round trip. AZ1 connects Guyana cargo with the Barbados hub and Dominica, with two Barbados calls in each rotation.

### 5.2 Alpha Zulu 2 Southern Windward Loop

Trinidad → Grenada → Saint Vincent and the Grenadines → Saint Lucia → Barbados → Trinidad. Approximately 525 nautical miles and five sailing legs per weekly round trip. AZ2 links Trinidad and the southern Windwards with Barbados.

AZ2 retains this route as the fleet expands. Connections with AZ4 and AZ5 at shared Windward ports, and with AZ6 in Trinidad, provide additional onward options without changing the published loop.

### 5.3 Alpha Zulu 3 Leeward Connection

Barbados → Dominica → Antigua → Dominica → Barbados. Approximately 560 nautical miles and four sailing legs per weekly round trip. AZ3 links the Barbados hub to Antigua through Dominica, with two Dominica calls per rotation.

### 5.4 Alpha Zulu 4 Windward Islands Shuttle

Barbados → Saint Lucia → Saint Vincent and the Grenadines → Grenada → Saint Vincent and the Grenadines → Saint Lucia → Barbados. Approximately 470 nautical miles and six sailing legs per weekly round trip. The outward and return calls strengthen distribution along the Windward chain.

AZ4 complements AZ2 and AZ5 at shared ports. One weekly rotation is proposed; the two calls in Saint Lucia and Saint Vincent and the Grenadines are parts of that rotation, not two complete weekly round trips.

### 5.5 Alpha Zulu 5 Southern Mainland Loop

Guyana → Trinidad → Grenada → Saint Vincent and the Grenadines → Guyana. Approximately 900 nautical miles and four sailing legs per weekly round trip. AZ5 links mainland supply with Grenada and Saint Vincent and the Grenadines and provides a second Guyana route alongside AZ1.

### 5.6 Alpha Zulu 6 Direct Breadbasket Shuttle

Guyana → Trinidad → Guyana. Approximately 700 nautical miles and two sailing legs per weekly round trip. AZ6 provides a direct mainland breadbasket shuttle, with onward connections through AZ2 and AZ5 in Trinidad and AZ1 and AZ5 in Guyana.

The complete network comprises six weekly round trips totalling approximately 4,165 route nautical miles and 25 sailing legs per fleet cycle. Distances are preliminary planning estimates, not navigational distances. Country sequences are fixed for this proposal; individual ports and terminals remain to be confirmed. Antigua is the northern limit of the six-route proposal; further northern services would be a later expansion.

## 6. Prospective Mesh Coordination

| Interchange node                 | Connecting services   | Prospective function                                            |
|----------------------------------|-----------------------|-----------------------------------------------------------------|
| Barbados                         | AZ1 + AZ2 + AZ3 + AZ4 | Principal hub linking Guyana, Windwards, Dominica and Antigua   |
| Dominica                         | AZ1 + AZ3             | Transfer between Guyana/Barbados service and Antigua connection |
| Saint Lucia                      | AZ2 + AZ4             | Windward distribution and Barbados/Trinidad connections         |
| Saint Vincent and the Grenadines | AZ2 + AZ4 + AZ5       | Windward distribution and Guyana/Trinidad connections           |
| Grenada                          | AZ2 + AZ4 + AZ5       | Southern Windward interchange                                   |
| Trinidad                         | AZ2 + AZ5 + AZ6       | Mainland gateway and onward Windward connections                |
| Guyana                           | AZ1 + AZ5 + AZ6       | Breadbasket origin and interchange for three mainland services  |
| Antigua                          | AZ3                   | Northern gateway of the proposed six-route network              |

The objective is to stagger the six weekly services so that cargo can transfer within the same 0800–1400 handling window where practical, otherwise within the following morning’s window. Barbados is the principal interchange for AZ1–AZ4; Guyana and Trinidad connect mainland services; Dominica, Saint Lucia, Saint Vincent and the Grenadines, and Grenada support onward

distribution. Final port and terminal selection, synchronization and published departure days require numerical VPP output, route-specific offshore wind and current data, berth availability, pilotage and operating experience. Connections are prospective rather than guaranteed.

## **7. Wind, VPP and Schedule Reliability Basis**

The current planning work uses approximately three years of hourly wind observations from Grantley Adams International Airport as a regional trade-wind proxy. These data are combined with the preliminary Alpha Zulu VPP to estimate sail-alone route VMG, tacking/gybing requirements, limited electric-assist hours and P90 passage allowances.

The analysis is preliminary. Closer pointing than approximately 60° true-wind angle is not assumed in the present planning approach. Route-specific offshore winds, currents, sea state and a final numerical VPP should replace proxy assumptions before firm commercial timetables are published. Each weekly loop must be checked against a 168-hour cycle, including port time and recovery margin; distance alone does not establish schedule feasibility.

The working energy architecture assumes approximately 1,000 kWh installed battery energy storage, with an 80% routine drawdown providing about 800 kWh usable energy, together with approximately 40 kW of installed solar generation. At 25 kW continuous supplementary propulsion, 800 kWh represents approximately 32 hours of theoretical full-assist endurance before allowing for solar contribution and other vessel loads.

## **8. The Network Inflection Point**

Month 36 is the conservative Network Inflection Point. At that stage AZ1, AZ2 and AZ3 form an interconnected scheduled network through Barbados, with AZ1 and AZ3 also sharing Dominica. Guyana and the southern Windwards gain onward connections to Antigua through the hub. The value of subsequent vessels includes both their own capacity and the additional transfer options and resilience they provide across the fleet.

At Month 40, AZ4 adds the Barbados–Windward return shuttle. At Month 44, AZ5 adds the Guyana–Trinidad–Grenada–Saint Vincent and the Grenadines loop. At Month 48, AZ6 completes the proposed six-route network with a direct weekly Guyana–Trinidad round trip. These additions complement the initial routes rather than trigger their replacement.

## **9. Deployment Scalability and Acceleration Caveat**

The deployment timetable presented in this submission is deliberately conservative and should be understood as a base-case production scenario rather than a constraint on the rate of fleet expansion.

It assumes Alpha Zulu 1 requires approximately 18 months to construct and commission, Alpha Zulu 2 approximately 12 months, Alpha Zulu 3 approximately six months, and Alpha Zulu 4 onward

approximately four months each. This sequence permits engineering, construction, commissioning, operational learning and market development to proceed progressively.

**The programme is, however, intended from inception to be scalable.** If pilot operations demonstrate demand materially greater than anticipated, or if CARICOM Member States, the OECS, development finance institutions or strategic industrial partners determine that accelerated regional deployment is warranted, construction need not remain sequential. Multiple vessels may be constructed concurrently through parallel production work streams and tooling, expanded workforce and supply-chain capacity, and potentially more than one regional commissioning location.

Accordingly, the Month-36 three-vessel network, Month-40 fourth vessel, Month-44 fifth vessel and Month-48 sixth vessel are conservative reference points. Month 48 is derived from continuing the four-month serial commissioning cadence. With sufficient demand, financing, institutional support and production capacity, deployment can be accelerated. Additional vessels beyond AZ6 would support maintenance cover, greater frequency or future geographic expansion.

***The rate at which the network develops need not ultimately be determined by the technology; it can be determined by demonstrated demand, available capital and the urgency with which the Caribbean chooses to deploy it.***

## 10. Strategic Regional Outcomes

- Reliable scheduled marine connectivity between small island markets that are presently difficult or costly to serve.
- A regional logistics platform supporting food security, agricultural production, manufacturing and SME trade.
- Progressive substitution of fossil-fuel-dependent marine transport with wind-primary ZeroFF operations.
- Caribbean maritime employment, seamanship, vessel ownership, shipbuilding and technical capacity.
- A transport network capable of increasing frequency and redundancy as additional vessels enter service.
- A practical mechanism for moving toward the longstanding objective of stronger CARICOM and OECS physical integration.

### 10A. Institutional Architecture

The three institutions are invited to participate in complementary rather than identical capacities. The CARICOM Secretariat is asked to provide Community-wide recognition, coordination and support for regional implementation. The OECS Commission is asked to provide political and implementation support across the Eastern Caribbean island network and to facilitate engagement among participating OECS Member States.

BMTA is invited to continue as the Barbados maritime-administration and implementation/facilitation counterpart, including technical and regulatory engagement and facilitation of discussions with development-finance and strategic partners. The programme should preserve the existing distinction between institutional facilitation and any separate future decision by the Government of Barbados concerning funding, guarantees or a particular financing structure.

## 11. Institutional Support Requested

Champion Maritime respectfully seeks robust written institutional support from the CARICOM Secretariat and OECS Commission, and continued implementation and facilitation engagement from BMTA. The requested roles are complementary and may be expressed separately or jointly as appropriate. Specifically, support is requested for:

- BMTA: continued maritime-administration, technical and regulatory facilitation and assistance with engagement of development-finance and strategic partners, without implying a Government of Barbados funding commitment, guarantee or endorsement of a particular financing structure;
- OECS Commission: political and implementation support across the Eastern Caribbean, including facilitation with participating Member States, ports and relevant agencies;
- CARICOM Secretariat: Community-wide recognition, coordination and support for the programme as a practical regional connectivity and trade-integration implementation initiative;
- recognition of the Alpha Zulu RoPAC programme as a regional connectivity, food-security, trade-facilitation, maritime-capacity and decarbonisation initiative;
- engagement with Member States and relevant ministries, port authorities and agencies to facilitate pilot and scheduled services;
- support for discussions with the Caribbean Development Bank, IDB/IDB Invest, Afreximbank, European Union/Global Gateway, FinDev Canada and other development and strategic financing partners;
- support for development of practical regional operating and cargo-transfer arrangements that permit the network to function as a mesh;
- recognition of the RUTH/Cari-Cargo pilot phase as the market-validation bridge to purpose-built Alpha Zulu deployment; and
- political and institutional support for moving from demonstration to implementation without unnecessary repetition of studies where the relevant question can instead be answered by operating the service and measuring the result.

## 12. Conclusion

The proposal is for six complementary weekly routes developed progressively from the market-validation phase. AZ1 connects Guyana, Barbados and Dominica; AZ2 links Trinidad and the southern Windwards with Barbados; AZ3 connects Barbados, Dominica and Antigua. AZ4 adds the Barbados–Windward return shuttle, AZ5 connects Guyana and Trinidad with Grenada and Saint

Vincent and the Grenadines, and AZ6 provides the direct Guyana–Trinidad breadbasket shuttle. Together, these loops establish a scheduled regional network with Barbados as its principal interchange hub.

Thereafter, serial production provides a repeatable pathway to greater frequency, redundancy and geographic reach. The conservative timetable demonstrates feasibility of staged implementation; the scalable production architecture preserves the option to move considerably faster if the region determines that the need, demand and opportunity justify it.

**Champion Maritime therefore invites the CARICOM Secretariat and OECS Commission, together with the Barbados Maritime Transport Administration in its national implementation and facilitation role, to support the transition from concept and pilot operation to implementation of a scheduled Caribbean maritime mesh.**