

APPENDIX A: GCC HARMONIZED SYSTEM (HS) CODE MATRIX

APPENDIX A

A.1 Priority Freight Classification & Regulatory Compliance

To ensure frictionless transit through the Ramlat Khilya / Rub' al Khali customs checkpoint, advance classification of high-volume industrial goods must align with both Saudi Customs (ZATCA) and Oman Customs standards.

Commodity Category	HS Code Chapter	Applicable GCC Duty Rate	Mandatory Pre-Clearance Certification
Oil & Gas Heavy Equipment	HS 8431.43	0% – 5% (Exempt with Project Code)	SABER CoC Certificate (Saudi Arabia) + Manufacturer Test Report
Industrial Organic Chemicals	HS 2902.20	5% Standard	Safety Data Sheet (GHS Compliant) + Civil Defense Approval
Pharmaceutical Products	HS 3004.90	0% (GCC Unified Medical List)	SFDA Import Permit + Cold Chain Continuous Thermal Log
Perishable Produce & Dairy	HS 0402.10 / HS 0709.99	0% – 5%	Phytosanitary Certificate + Gulf Conformity Mark (G-Mark)

APPENDIX B: SINGLE-WINDOW EDI ERROR DIAGNOSTICS

APPENDIX B

B.1 Common API Response Codes & Resolution Steps

Automated cross-border filings occasionally trigger validation rejections. The technical matrix below details common API fault strings encountered during Bayan-to-FASAH payload synchronization.

```
// Sample JSON Payload Validation Error Response (FASAH Gateway) { "errorCode": "ERR-ZATCA-4092", "status": "REJECTED", "timestamp": "2026-08-17T02:15:00Z", "message": "HS Code mismatch between e-COO and Advance Manifest", "fieldRef": "declaration.lineItems[02].hsCode", "actionRequired": "Re-verify 8-digit tariff code against Saudi Customs tariff schedule." }
```

Error Code	Trigger Condition	Root Cause	Corrective Protocol
ERR-BAYAN-1004	Invalid Driver ID / Plate Mapping	Vehicle plate number format does not match GCC cross-border transport registry.	Re-index vehicle chassis & plate number in Oman Ministry of Transport database.
ERR-ZATCA-2088	Smart Seal Unsynchronized	RFID Electronic Seal serial number does not respond to border gate reader.	Manually verify seal ID in Bayan portal; request physical inspection bypass at gate.
ERR-SFDA-3012	Temperature Log Break	IoT telematics reported temperature spike above +8 °C for >15 minutes.	Route container to SFDA quarantine bay at SPARK Dry Port for lab sample testing.

APPENDIX C: EMERGENCY PROTOCOLS & CRISIS MATRIX

APPENDIX C

C.1 Desert Operational Risk Mitigations

CRITICAL SAFETY ALERT: Highway stretches across the Rub' al Khali experience sudden sandstorms (Haboobs) reducing visibility to under 5 meters. Fleet operators must enforce strict automated convoy procedures during adverse weather alerts.

Emergency Scenario	Primary Severity	Automated Fleet Response	Backup Recovery Protocol
Engine Thermal Shutdown	High	Telematics alerts dispatch center; vehicle pulls into roadside emergency pit-stop	Dispatch mobile recovery unit from nearest Rub' al Khali maintenance station (Max 90 min response).

Emergency Scenario	Primary Severity	Automated Fleet Response	Backup Recovery Protocol
		bay.	
Reefer Unit Failure (+50 °C Ambient)	Critical	Dual-power auto-switch triggers backup electric battery compressor; driver notified.	Emergency transfer of payload to backup standby reefer truck at designated transit hub.
Satellite / GPS Signal Blackout	Medium	OBU switches to local inertial navigation & dead-reckoning tracking mode.	Driver proceeds via highway emergency telephone pylons located every 10 km.