

# Regulating for Resilience

Case Studies and Lessons from  
Trinidad & Tobago and ECTEL  
Building Regulatory and Policy  
Frameworks for Secure, Inclusive  
Infrastructure

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# Defining Regulatory Resilience

## What is Regulatory Resilience?

- The capacity of laws, regulations, and institutions to withstand shocks (natural disasters, cyber incidents, systemic failures)
- Ensuring continuity of essential services and critical infrastructure





# Defining Regulatory Resilience

## Key Pillars:

- Legal clarity and flexibility
- Institutional coordination and governance
- Stakeholder inclusivity (public, private, civil society)
- Technology-agnostic risk management







## Part 1 – Lessons from ECTEL: Regional Coordination for Resilience

### What is Regulatory Resilience?

- **ECTEL Mandate & Member States:**
  - Regulates ICT/telecom across five Eastern Caribbean nations (Antigua & Barbuda, Dominica, Grenada, St. Kitts & Nevis, St. Lucia, St. Vincent & the Grenadines)
  - Harmonizes licensing, quality of service (QoS) standards, and universal access obligation
- **Regional Risk Profile:**
  - High hurricane frequency, volcano risks, earthquake zones
  - Limited domestic data-centre capacity; heavy reliance on undersea cables





## **ECTEL's Regulatory Framework for Resilience**

### **Regional Quality of Service (QoS) Code (2021):**

- Obliges licensees to maintain at least two physically diverse international submarine cable connections
- Sets maximum “Time to First Re-connect” at 72 hours under any failure scenario

### **Emergency Spectrum Allocation Guidelines:**

- Licensees must commit 10 % of spectrum for emergency responders (police, ambulance, disaster agencies) during declared events

### **Data Embassy / Regional Hosting Dialogue:**

- ECTEL working group exploring a shared “Eastern Caribbean Data Embassy” concept
- Preliminary MoU drafted for shared custody of member-state critical databases (e-government portals, health records)
- Aim: collective cost-sharing and mutual assistance under a regional treaty framework



## Case Studies & Outcomes (ECTEL)

- **Post-Hurricane Maria (2017) Response:**
  - Telecommunications providers leveraged reciprocal roaming agreements
  - Emergency backhaul routes rerouted via neighboring islands within 8 hours
- **COVID 19 Digital Pivot (2020):**
  - ECTEL-mandated virtual CPE (customer premise equipment) guidelines enabled remote teaching within 48 hours of school closures
  - Regional digital-health data sharing protocol adopted by all five jurisdictions
- **Edge-Computing Pilot (2024):**
  - Small “micro-data hubs” established in Grenada and Dominica for local agriculture monitoring (dry-run for future resilience architectures)
  - Uses standardized open-source APIs for conditional data portability to regional analytics center

## Lessons from ECTEL – Best Practices for Resilience

### Cross-Border Reciprocity & Mutual Aid

- Pre-negotiated spectrum lending and roaming agreements expedite service restoration
- Regional Data Embassy concept reduces individual member burden

### Uniform Regulatory Standards:

- Consistency in QoS and disaster-planning requirements prevents “regulatory arbitrage”
- Shared enforcement mechanisms (joint monitoring, peer reviews)







## Lessons from ECTEL – Best Practices for Resilience

### Leveraging Shared Resources:

- Pooled funding for undersea cable maintenance and insurance
- Joint procurement of hardened edge-computing containers for remote islands

### Progressive Policy Iteration:

- Annual regional resilience summits to review frameworks against evolving threats (climate change, cyber-attacks)
- Incorporation of feedback loops from local community networks and NGOs





## Key Initiatives & Case Studies (T&T and wider)

### National Data Embassy Pilot (2024):

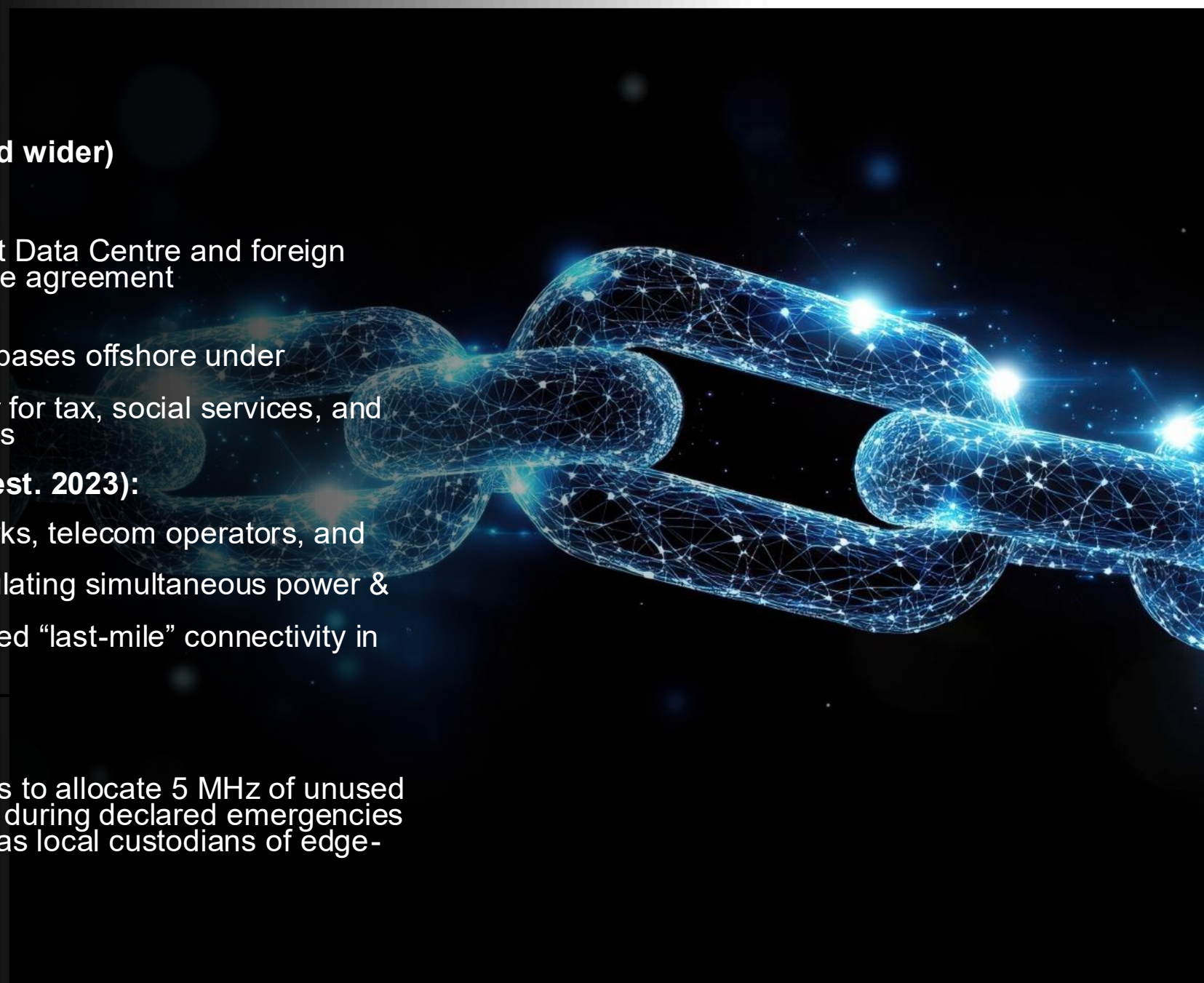
- Partnership between Government Data Centre and foreign hosting provider under SOFA-style agreement
- Objectives:
  - Replicate critical citizen databases offshore under sovereign immunity
  - Ensure sub-5-minute failover for tax, social services, and emergency response systems

### Public-Private Resilience Task Force (est. 2023):

- Comprising TATT, Ministry of Works, telecom operators, and cybersecurity firms
- Quarterly tabletop exercises simulating simultaneous power & network outages
- Shared funding model for hardened “last-mile” connectivity in vulnerable regions

### Inclusive Broadband Scheme:

- Regulatory requirement: licensees to allocate 5 MHz of unused spectrum to community networks during declared emergencies
- Community cooperatives trained as local custodians of edge-data nodes





## Lessons from T&T – Building Secure, Inclusive Infrastructure

### Holistic Risk Approach:

- Combine natural-disaster planning with cyber-resilience mandates
- Synchronize telecom, financial and data-privacy regulations under common resilience objectives

### Legal Instruments with Built-In

#### Flexibility:

- Emergency data exceptions in Data Protection Act (public health, national security)
- Periodic regulatory review clauses tied to technological evolution (e.g., IoT, 5G)








## Lessons from T&T – Building Secure, Inclusive Infrastructure

### Stakeholder Engagement & Capacity Building:

- Early involvement of community networks to serve remote areas
- Regular multi-sector drills to build trust and identify gaps

### Data Embassies as Force Multipliers:

- Off-shore copies of critical databases ensure continuity when domestic infrastructure is compromised
  - Requires clear treaty-style immunity and data-sovereignty provisions before launch
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## Comparative Insights & Recommendations

### Common Themes (T&T vs. ECTEL):

- Integrate disaster-risk and cyber-resilience under unified regulatory mandates
- Emphasize redundancy (network, data, governance) through legal requirements
- Prioritize inclusive access via community networks and emergency spectrum allocations





## **Comparative Insights & Recommendations**

### **Opportunities Ahead:**

- Expand Data Embassy pilots into multi-island federated model
- Standardize “edge-data node” frameworks for rural/remote resilience across jurisdictions
- Enhance public-private collaboration through joint resilience funds and capacity-building grants

### **Next Steps for Regulators & Policymakers:**

- Conduct a joint T&T – ECTEL workshop to align resilience metrics and share best practices
- Convene a multi-sector resilience task force for Caribbean digital infrastructure





Thank You!

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