JERT DC Reserve Node — Technical Specification v1.1 (EN)

Executive Technical Summary

JERT DC Reserve Node is an autonomous, containerized data center module designed to operate as an independent reserve compute and energy island for existing data center operators. It complements primary data centers by providing multi-day autonomous compute and power continuity, avoiding diesel-centric backup limitations.

Form factor	ISO 20 ft compute module + ISO 40 ft LNG + BTU power module (physically se
Usable IT load	180–200 kW
Racks	3 × 42U liquid-ready racks
Cooling	Direct-to-chip liquid cooling, CDU (N+1)
LNG autonomy	20 metric tons LNG ≈ 139 MWh usable electrical energy
Design autonomy	20–25 days (design); SLA target ≥ 10 days
Network	Optical L3 with BGP/VRRP; Kubernetes & VM DR compatible

Reference Architecture

- ISO 20 ft container with liquid-cooled GPU infrastructure (compute module).
- ISO 40 ft LNG + BTU power module providing grid-independent island operation.
- LNG cold energy recovery used as the primary heat sink for liquid cooling; dry cooling as redundancy.
- Physically separated deployment from the primary data center (risk zone separation).

Compute & VRAM Capacity

Target usable IT load is 180–200 kW with a mixed GPU configuration (48 GB and 80 GB). Total reference capacity is approximately 18.8 TB of VRAM across ~280 GPUs.

Power Generation & LNG Autonomy

20 metric tons of LNG provide approximately 139 MWh of usable electrical energy. Design autonomy is 20–25 days, with a contractual SLA target of at least 10 days autonomous service.

Liquid Cooling & Cold Energy Recovery

Direct-to-chip liquid cooling with centralized CDU (N+1). LNG cold recovery is used as the primary heat sink, with external dry cooling as redundancy.

Network Integration

Optical L3 connectivity with BGP/VRRP support; compatible with Kubernetes-based and VM-based disaster recovery platforms.

Operational Modes

- Cold standby
- Warm standby
- Optional active-active mode

Security & Physical Separation

- Grid-independent operation
- Separate fire and risk zones
- Non-urban siting capability (where permitted)

Deployment Requirements

- 20 ft container pad and access for installation/maintenance.
- LNG safety zone and local permits for fuel storage and generators (jurisdiction-dependent).
- Cooling interfaces and redundancy connections (dry cooling).

SLA Assumptions

Guaranteed autonomy ≥ 10 days, defined VRAM capacity, and operational design margins beyond contractual limits.

Appendix A — Commercial & Capacity Assumptions (EUR)

Pricing is based on availability, autonomy, and guaranteed capacity rather than peak utilization.

- Reference VRAM-hour pricing: €0.0009 to €0.0013 per GB·hour.
- Container-day pricing: €45,000 to €65,000 (EU DC-friendly reserve positioning).

Note: Commercial figures are indicative and subject to supplier quotes, compliance scope, and final site requirements.