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A "SEATLESS" ARBITRATION? RECONCILING DECENTRALIZED JUSTICE WITH THE LEX LOCI ARBITRI DOCTRINE

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Abstract. The concept of the lex loci arbitri, which tethers international arbitration to the legal framework of a specific physical jurisdiction, faces an existential challenge from the rise of decentralized and delocalized disputes. As human activity expands into "seatless" domains such as cyberspace and outer space, traditional mechanisms for dispute resolution are proving inadequate for addressing conflicts over intangible assets and cross-border digital infrastructures. This article explores the friction between the territorial nature of the lex loci arbitri and the emerging demand for "seatless" or decentralized justice systems. Drawing on recent scholarship regarding space law, cyber sovereignty, and state responsibility, this study analyzes the legal vacuum currently surrounding mission-critical disputes in non-territorial environments. The research identifies that the rigidity of current investment treaties and the International Centre for Settlement of Investment Disputes (ICSID) frameworks leaves significant gaps in legal protection for intangible assets, such as orbital slots and digital data. The article concludes that reconciling these paradigms requires a doctrinal overhaul, moving towards consortium-based consent mechanisms and a functional, rather than territorial, approach to jurisdiction, effectively creating a lex mercatoria for the post-territorial age.

Kalit so‘zlar: Seatless Arbitration, Lex Loci Arbitri, Decentralized Justice, Space Law, ICSID, State Responsibility, Cyber Sovereignty, Intangible Assets

Introduction

The international legal order has long relied on the principle of *lex loci arbitri*—the law of the place of arbitration—to provide the procedural framework and supervisory legitimacy for arbitral awards. This doctrine assumes that every dispute has a geographical anchor, a physical location where the tribunal sits and whose courts possess the authority to annul or enforce the award. However, the rapid evolution of technology and the expansion of commercial activities into non-territorial domains are rendering this assumption increasingly obsolete. The emergence of "decentralized justice," characterized by disputes arising in cyberspace and outer space, presents a scenario where the physical seat is either indeterminate or entirely irrelevant to the subject matter of the dispute.

The challenge is most acute in high-technology sectors where assets are fundamentally intangible. Recent inquiries into the legal status of computer data and space assets reveal that these "objects" of commerce often exist outside the traditional boundaries of state sovereignty. For instance, data stored in distributed clouds or satellites orbiting in the global commons does not sit neatly within the jurisdiction of a single state. Consequently, when disputes arise over the ownership, destruction, or misuse of these assets, the parties often find themselves in a legal vacuum, lacking a clear *lex fori* to govern the proceedings.

This jurisdictional ambiguity is exacerbated by the "rupture" in liability models caused by emerging technologies. As noted in recent legal scholarship regarding the "quantum reckoning," the advent of advanced computing and cross-border digital interactions is forcing a profound reconsideration of how regulatory systems interact with issues of sovereignty. The static definitions of territory and jurisdiction are buckling under the pressure of instant, transnational data flows and the commercialization of outer space. The legal profession is thus confronted with more than a technical problem; it faces a potential systemic failure in contractual certainty and cross-border governance.

The urgency of this issue is underscored by the growing volume of "mission-critical" disputes that currently lack clear remedies. In the realm of space commerce, for example, conflicts over orbital slots, frequency licenses, and proprietary data are becoming commonplace. Yet, international investment tribunals have been slow to address the status of these assets, leaving investors and

states without a predictable dispute resolution mechanism. This gap exposes a critical disconnect between the *de facto* reality of decentralized commerce and the *de jure* requirements of the *lex loci arbitri*.

Furthermore, the problem of "seatless" arbitration is intimately tied to the broader crisis of attribution and state responsibility in the digital age. In cyberspace, the difficulty of attributing conduct to a specific state actor undermines the efficacy of traditional legal remedies. If a state cannot be definitively linked to a cyber operation that destroys digital assets, the injured party is left without recourse under public international law. This attributional void drives commercial actors to seek alternative, decentralized forms of justice that do not rely on the cooperation of recalcitrant states or the slow machinery of diplomatic protection.

Methodology

This article employs a qualitative doctrinal analysis to examine the compatibility of the *lex loci arbitri* doctrine with the exigencies of decentralized justice. The analysis draws primarily on a corpus of academic literature and legal texts ranging from 2016 to 2025, covering the fields of international arbitration, space law, cyber law, and state responsibility. The study utilizes a comparative approach, juxtaposing the rigid territorial requirements of the *New York Convention* and ICSID rules against the fluid, non-territorial nature of disputes identified in contemporary legal scholarship.

The primary source material includes recent abstracts and papers on global convergence in law, specifically those addressing the lacunae in investment arbitration for space assets. These texts provide the empirical basis for identifying the specific types of disputes—such as those involving orbital slots and frequency licenses—that are currently "homeless" within the international arbitration system. The analysis further integrates theoretical work on the legal status of data as an "object," testing whether existing definitions in international humanitarian law and private international law can be stretched to cover the subject matter of seatless arbitrations.

To address the broader implications of decentralized justice, the methodology incorporates literature on the "rational choice theory" of compliance and state responsibility. This theoretical lens is used to understand why states and private actors might prefer or resist the move towards seatless arbitration

mechanisms. By analyzing the cost-benefit calculus of non-compliance in an anarchical international system, the study illuminates the incentives for developing self-contained, consortium-based dispute resolution systems that operate independently of national courts.

The research also scrutinizes the concept of "due diligence" as a potential substitute for the *lex loci arbitri* in non-territorial spaces. By reviewing doctoral theses and academic articles on the obligations of prevention and termination of harm in cyberspace, the study assesses whether a "standard of care" can replace the "law of the seat" as the governing principle for decentralized disputes. This involves a close reading of the International Law Commission's Articles on Responsibility of States to determine if the principles of attribution and breach can be adapted to arbitral contexts where no single state has jurisdiction.

Finally, the methodology avoids reliance on unverified or synthetic data, strictly adhering to the findings presented in the selected peer-reviewed sources. The arguments are constructed by synthesizing the identified legal gaps in space and cyber law with the proposed doctrinal solutions, such as the integration of consortium-based consent mechanisms into Bilateral Investment Treaties (BITs).

Results

The analysis reveals that the current international arbitration framework is structurally ill-equipped to handle disputes arising in "seatless" environments. A primary finding is the "coverage gap" in the protection of space-sector assets. As highlighted in recent scholarship on global convergence, key assets such as orbital slots and frequency licenses are largely intangible and regulatory in nature. While telecommunications arbitrations have historically recognized similar assets as protected investments, ICSID tribunals have not yet explicitly addressed their status in the context of space commerce. This hesitation leaves a significant class of mission-critical disputes without a clear legal home, effectively rendering them "seatless" in terms of enforceable remedies.

The study further identifies that the principles of space law—such as non-appropriation, liability for debris, and environmental protection—are not currently integrated into existing investment treaty frameworks. This lack of integration discourages tribunals from applying norms that are crucial to resolving disputes over mission failures or defaults in orbit. Consequently, the *lex loci*

arbitri, which typically imports the domestic law of the seat or international law applicable to the parties, fails to capture the specialized obligations inherent in space operations. The result is a legal fragmentation where the substantive rules of the dispute are disconnected from the procedural rules of the arbitration.

In the digital domain, the results point to a similar disconnect regarding the legal status of computer data. Research into International Humanitarian Law indicates that there is an ongoing debate about whether data qualifies as an "object." If data is not considered an object, it may fall outside the scope of property protections that are central to investment arbitration. This ambiguity complicates the resolution of disputes involving the theft, corruption, or destruction of digital assets, as tribunals may struggle to determine whether they have subject-matter jurisdiction over "non-objects" located in virtual space.

The analysis also highlights the friction between decentralized justice and the doctrine of state responsibility. In the context of cyber operations, the attribution of conduct to a state is a prerequisite for invoking responsibility. However, the technical complexity and anonymity of the cyber domain often make strict attribution impossible. This evidentiary hurdle renders traditional state-to-state dispute resolution ineffective for many digital grievances. The "seatless" nature of the internet, where data packets traverse multiple jurisdictions in milliseconds, defies the logic of the *lex loci arbitri*, which presupposes a stable connection between the legal event and a specific territory.

Furthermore, the reliance on the "effective control" standard for attributing the acts of non-state actors to states is proving inadequate for the decentralized reality of modern commerce. As noted in the literature on cyber mercenaries and private defense firms, states often delegate operations to private entities to avoid accountability. In a decentralized justice model, these private actors operate across borders without a clear "home" jurisdiction, creating a layer of impunity that traditional arbitration cannot penetrate. The *lex loci arbitri* of a neutral venue often lacks the teeth to compel evidence or enforce awards against these elusive entities.

The study finds that proposed solutions in the literature are moving towards "consortium-based" governance. Scholars advocate for a doctrinal overhaul that incorporates specific consent mechanisms into financing Memoranda of Understanding (MOUs) and commercial contracts. These mechanisms would

effectively create a self-contained "seat" within the contractual framework of the consortium, bypassing the need for a physical *lex loci arbitri*. This approach mirrors the "rational choice" behavior of states, which seek to minimize the transaction costs of compliance by internalizing dispute resolution within specific industry agreements.

However, the transition to such decentralized mechanisms is hampered by the lack of "crypto-agility" and legal readiness in national frameworks. Just as critical infrastructure must prepare for post-quantum cryptography to avoid future threats, legal systems must adapt to "harvest" disputes now that may not be resolvable under future interpretations of the law. The current regulatory gaps in finance and technology suggest that without proactive standardization, decentralized arbitration awards may face insurmountable hurdles at the enforcement stage in national courts.

Discussion

The emergence of "seatless" arbitration necessitates a re-evaluation of the function of the *lex loci arbitri*. Historically, the seat served as the juridical anchor that prevented arbitration from floating in a legal void. However, in disputes concerning the "global commons"—such as deep space or the decentralized web—the insistence on a territorial seat is an imposition of 19th-century geography onto 21st-century reality. The discussion suggests that the *lex loci arbitri* must evolve from a territorial concept to a functional one. In this view, the "seat" would not be a physical place, but a "juridical environment" defined by the specific treaty or consortium agreement governing the dispute.

This functional approach aligns with the "due diligence" obligations identified in international law. If a state cannot offer a physical forum that understands the technicalities of a space or cyber dispute, its duty of due diligence should compel it to recognize the validity of decentralized tribunals. The obligation to "prevention and termination" of harm in cyberspace implies a corollary obligation to provide or recognize effective remedies. If national courts are technically incompetent to judge the destruction of an orbital slot, relying on a decentralized, expert-led tribunal becomes a fulfillment, not a violation, of due process.

The "doctrinal overhaul" advocated for space law offers a blueprint for other decentralized sectors. By embedding ICSID referral clauses directly into commercial contracts and explicitly recognizing intangible assets as protected investments, parties can manufacture a "synthetic seat." This aligns with the findings that investor-state dispute settlement (ISDS) mechanisms need to evolve to meet the demands of multi-state ventures. The "seat" effectively becomes the treaty itself, rather than the city in which the hearings are held.

However, this shift challenges the supervisory role of national courts. The *New York Convention* relies on the courts of the seat to set aside awards. In a seatless model, this supervisory function is lost, raising concerns about the lack of checks and balances. The literature on "rational choice" suggests that states will only agree to such a system if the benefits of legal certainty for their investors outweigh the loss of sovereign oversight. This is where the concept of "regulatory readiness" becomes critical; states must develop "conflict of laws" rules that specifically accept the finality of decentralized awards to attract high-tech investment.

The parallels with "crypto-agility" are instructive. Just as organizations must adopt agile security architectures to survive the quantum threat, legal systems must adopt "jurisdictional agility." This means creating frameworks that can swiftly recognize and enforce awards based on code, smart contracts, or space treaties, without bogging them down in traditional territorial inquiries. The "harvest now, decrypt later" threat in cybersecurity has a legal equivalent: "sign now, litigate later." If the legal basis for arbitration is not secured (harvested) in the contract today, the dispute will be undecryptable by tribunals in the future.

Moreover, the discussion highlights the role of private actors in shaping this new *lex mercatoria*. The "privatization" of international law, where non-state actors play an increasing role in norm-setting, is evident in the push for consortium-based consent. These private consortiums are essentially writing the rules of the game for the orbital economy and the metaverse. The challenge for international law is to integrate these private norms into the public framework of state responsibility, ensuring that "seatless" does not mean "lawless."

The "transatlantic divide" in privacy and data protection also illustrates the pitfalls of a fragmented jurisdictional approach. Divergent standards on what

constitutes a "reasonable expectation of privacy" or a protected data "object" create friction in cross-border arbitration. A seatless model, governed by uniform international standards (like those proposed for post-quantum cryptography), could bridge these divides by removing the idiosyncrasies of local law from the equation.

Ultimately, reconciling decentralized justice with the *lex loci arbitri* requires acknowledging that the "locus" (place) is no longer the defining feature of the "lex" (law). The law must follow the asset, not the territory. Whether it is a satellite in geostationary orbit or a cryptographic key in a distributed ledger, the dispute resolution mechanism must be attached to the functionality of the asset. This requires a move towards a "transnational" arbitration law that exists above and apart from domestic legal systems, supported by a network of treaty obligations that enforce its outcomes globally.

Conclusion

The fiction of the *lex loci arbitri* is straining under the weight of a reality that is increasingly delocalized. As this article has demonstrated, disputes in outer space and the digital realm expose deep fissures in the traditional architecture of international arbitration. The lack of clear remedies for mission-critical, intangible assets threatens to stifle innovation and investment in these frontiers. To bridge this gap, the international legal community must embrace a paradigm of "seatless" arbitration, grounded not in physical territory, but in consortium-based consent and functional jurisdiction.

This transition requires a concerted effort to update international treaties and domestic laws. The "doctrinal overhaul" proposed for space law—recognizing intangible assets and integrating specific environmental and liability norms—serves as a critical first step. Furthermore, the principles of due diligence and state responsibility must be reinterpreted to support, rather than hinder, the recognition of decentralized justice mechanisms. By validating these alternative forums, states can fulfill their obligation to provide effective remedies even in zones where they lack effective control.

The future of arbitration lies in its ability to detach itself from the map. Just as technology has liberated commerce from geography, the law must liberate justice from the constraints of the seat. The "seatless" arbitration is not an abandonment of law, but an evolution of it—a necessary adaptation to ensure that

in the silent vacuums of space and the noise of the digital sphere, the rule of law can still be heard.

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