



## **TG GROUP TEKNOLOJİ SANAYİ VE TİCARET LIMITED SİRKETİ**



### **AUDIT READINESS REPORT Project:**

### **USDTgTokenTRC20 (TetherGround USD) Version: 1.0**

Prepared for: TG Group Teknoloji Sanayi ve Ticaret Ltd. Sti.

Date: 24.04.2025

This document contains security, architecture, and audit-readiness details regarding the smart contract implementation of the USDTgTokenTRC20 project.

All contents are proprietary and intended for audit, investor, and platform compliance use.

Signature: \_\_\_\_\_ Authorized

Signatory: İrfan Gedik - It was prepared by "TG Group Teknoloji Sanayi ve Ticaret Ltd. Sti." to be signed with e-signature.



# Audit Readiness Documentation

## USDTgTokenTRC20

**Version:** 1.0

**Audit Prepared For:** TG Group Teknoloji Sanayi ve Ticaret Ltd. Şti.

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### Contract Summary

- **Token Name:** CircleGuard USD (USDTg)
- **Standard:** TRC20 (TRON-compatible ERC20)
- **Compiler Version:** ^0.8.20
- **Optimization:** Enabled (200 runs)
- **License:** MIT
- **Frameworks:** OpenZeppelin, Hardhat



### Security Modules Implemented

Feature	Description
ReentrancyGuard	Prevents reentrancy attacks on minting and transfers
Pausable	Admins can pause the system in emergencies
AccessControl	Role-based permission system
TimelockController	DAO-compatible governance delay for critical operations
Blacklist / Whitelist	Restricts malicious or non-compliant wallets
Mint Cooldown	Prevents flash mint or repeated abuse of minting within short intervals
Fee System	Transfers apply a fixed 1% fee to feeWallet
Fixed + Oracle-based Pricing	Pricing is based on Chainlink Oracle or fallback fixed price



## Role and Permission Model

Role Name	Capabilities
DEFAULT_ADMIN_ROLE	Manages roles, ownership (assigned to Timelock)
ADMIN_ROLE	Sets treasury, max supply, pauses contract
MINTER_ROLE	Mints tokens, subject to cooldown and whitelist
FEE_MANAGER_ROLE	Can change the <code>feeWallet</code> address
PAUSER_ROLE	Can pause/unpause operations

**Note:** All critical functions are behind role-checks AND time-lock governance.



## Audit-Oriented Event Logging

Action	Event
Minting	<code>TokensMinted(address, uint256)</code>
Supply Cap Change	<code>MaxSupplyUpdated(uint256)</code>
Price Update	<code>FixedUSDPriceUpdated(uint256)</code>
Freeze Supply	<code>SupplyFrozen()</code>
Chainlink Fallback	<code>PriceFeedFallbackUsed(uint256)</code>



## Governance Notes

- **Treasury Wallet Control:** Only ADMIN\_ROLE, executed **via Timelock**.
- **Fee Wallet Control:** Role FEE\_MANAGER\_ROLE, updated directly.
- **All privileged changes** are designed to be DAO-executable via TimelockController.



## Additional Protections

- **Contracts cannot mint tokens:** Enforced by `tx.origin == msg.sender`
- **Blacklist enforced in all transfer paths**

- **Whitelist enforced during minting**
- **Manual price fallback to fixedUSDPrice on oracle failure**
- **Cooldown logic prevents spam-minting or rug-pulling attempts**



## Contract Files

- USDTgTokenTRC20.sol
- Flattened Source: [Link to verified contract on TronScan or IPFS]
- Audit Report PDF (pending): [audit/USDTg\_Audit\_Report\_Signed.pdf]



## Recommendations (Audit Feedback Ready)



## Final Note

This contract has been designed with **maximum audit resilience, governance compatibility, and security-first architecture.**

Please refer to source comments for inline documentation. We welcome all feedback and contributions.

**Prepared by:** TG Group Teknoloji ve Sanayi Tic. Ltd. Sti.

~~**With assistance from:** ChatGPT v2. Monday Mode (cynical, loyal, too smart for its own good)~~