

**ORDER NO: NERC/2023/005**

**BEFORE THE NIGERIAN ELECTRICITY REGULATORY COMMISSION  
ORDER ON THE MIGRATION OF TOKEN IDENTIFIER OF STANDARD  
TRANSFER SPECIFICATION METERS FROM KEY REVISION 1 TO KEY  
REVISION 2**

**Title**

1. This regulatory instrument may be cited as the *Order on the Migration of Token Identifier of Standard Transfer Specification Meters from Key Revision 1 to Key Revision 2*.

**Commencement**

2. This Order takes effect from 6 July 2023 and remains in force until amended or revoked by subsequent Orders issued by the Nigerian Electricity Regulatory Commission ("NERC" or the "Commission").

**Background**

3. The Standard Transfer Specification ("STS") describes a secure message system for carrying information between a point-of-sale and a meter and is currently widely used in electricity metering and payment systems. STS is an open standard that permits STS-compliant equipment from various suppliers to be inter-operable and provides a secure message system for transmitting information between a point-of-sale and the meter. The use of the STS standard prevents -
  - a. Fraudulent transfer of credit resulting from hit and miss attempts at entering the correct number into the meter.
  - b. Fraudulent generation of tokens from a stolen vending station.
  - c. Fraudulent generation of tokens from legitimate vending stations outside of the utility's areas of operations.

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- d. Fraudulent reuse of tokens which have already been used.
  - e. Tampering of legitimate tokens that could result in the change of values issued on them.
4. STS provides the facility of generating tokens which can only be used by the intended meter and can only be used once by that meter. STS achieves this by -
- a. The use of advanced encryption techniques which are at all times hidden from the customer.
  - b. The use of very secure key management procedures, including the manner in which keys are generated and transported.
  - c. The required security functionality at both the vending station and the meter.
5. STS was initiated developed by Eskom, the major electricity utility in South Africa, in 1993 as a means of ensuring compatibility between meters and vending systems from different suppliers whilst providing sufficient security to prevent fraud. The STS Association ("STSA") was established in 1996 to take over the STS technology, maintain the necessary infrastructure to promote the technology internationally and further develop the standard to meet emerging international demands for additional functionality.
6. STSA has mandated the migration of the Token Identifier ("TID") of all STS compliant meters in the network of all distribution licensees from key revision 1 to key revision 2 by 24 November 2024.
7. The TID is a 24-bit field token identifier that recognises the date and time a token is generated and invalidates a used token. All STS prepayment meters will be affected by the TID roll-over on 24 November 2024 and tokens generated after this date and utilising the 24-bit TID calculated on the 1993 base date will be rejected by the meters as the value encoded in the token would reset back to zero.
8. The TID memory of meters would be required to be reset and a new meter key loaded by means of 2 (two) special key-change tokens before 24 November 2024.

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9. The Nigerian Electricity Supply Industry (“NESI”) has about 4million STS meters in various networks of distribution licensees and failure to upgrade to the new version before 24 November 2024 would result in customer apathy with the inability to vend, huge revenue losses to distribution licensees from the inability of customers to vend and a heightened risk of meter vandalism and bypass.

### **Objective**

10. This Order seeks to –
- a. Ensure that all distribution licensees in NESI migrate the TID of all STS meters in their network from key revision 1 to key revision 2 before 24 November 2024.
  - b. To ensure that customer vending is not constrained after 24 November 2024 on account of the inability to generate tokens.
  - c. Ensure that that distribution licensees develop clear and coherent communication strategies on the enlightenment of end-use customers and the general public on the migration of the TID of STS meters from key revision 1 to key revision 2.


### **THE COMMISSION HEREBY ORDERS as follows –**

- A. All distribution licensees shall ensure that the STS meters in their network are migrated from TID key revision 1 to TID key revision 2 on or before 31 July 2024.
- B. All distribution licensees shall upgrade their vending systems and secure module to be STS600-4-2 compliant before 31 July 2024.
- C. All distribution licensees are henceforth prohibited from installing meters that are not STS-TID key revision 2 compliant with effect from 6 July 2023.
- D. All distribution licensees develop clear and coherent communication strategies on the enlightenment of end-use customers and the general public on the migration of the TID of STS meters from key revision 1 to key revision 2. The communication and public enlightenment plans of all utilities shall be filed with the Commission by 31 August 2023.

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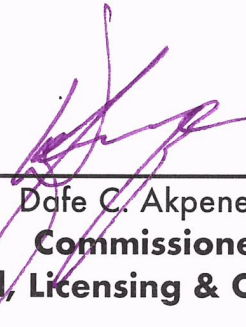
- E. All distribution licensees shall ensure that STS compliant meters that cannot be rolled over to STS - TID key revision 2 are retrofitted and migrated by 31 July 2024.
- F. All distribution licensees shall establish STS - TID key revision 2 migration teams to coordinate and serve as the project management office for the respective utilities. The migration teams shall file the utility's roadmap/plan to complete the project within the specified deadline. The roadmaps/project plans shall be filed with the Commission by 31 August 2023.
- G. All distribution licensees shall file monthly progress reports with the Commission.

Dated this 6<sup>th</sup> day of July 2023.



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Sanusi Garba  
**Chairman**



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Dafe C. Akpeneye  
**Commissioner**  
**Legal, Licensing & Compliance**