Addendum to following Annexure

1. 1.6 Delivery
2. Annexure 02 - Eligibility Criteria
3. Annexure 12 - Scope of Work with Technical Requirements Details

All other Terms & Conditions are same as per our RFP for Supply, Implementation and Maintenance of Hardware Security Module (HSM) Ref no. BCC:IT:PROC:114:20 dated 11th May, 2022.

Sr. No.	Clause in RFP	Clarifications / Changes made
1	**1.6 Delivery** All the deliverables should be delivered within 8 weeks from the date of issuance of purchase order to the successful bidder. Bidder will have to pay late delivery charges to Bank of Baroda @ 1% of the delayed product value inclusive of all taxes, duties, levies etc., per week or part thereof, for late delivery beyond due date of delivery, to a maximum of 5% of the delayed product value. If delay exceeds the maximum percentage of 5%, Bank of Baroda reserves the right to cancel the entire order. …… ……	**1.6 Delivery** All the deliverables should be delivered within 8 weeks from the date of issuance of purchase order to the successful bidder. Bidder will have to pay late delivery charges to Bank of Baroda @ 1% of the delayed product value inclusive of all taxes, duties, levies etc., per week or part thereof, for late delivery beyond due date of delivery, to a maximum of 5% of the delayed product value. If delay exceeds the maximum percentage of 5%, Bank of Baroda reserves the right to cancel the entire order. **Successful Bidder shall provide a certificate from the OEM to ensure continuous AMC support of existing HSMs being used in the Bank in case delivery of the new HSM is delayed beyond given timelines without any additional commercials. In such case, late delivery charges shall not be applicable.** …… ……
2	**Annexure 02 - Eligibility Criteria** …… …… **D. Experience & Support Infrastructure** 1. The bidder should have supplied, Installed and supported for at least -2- no's of HSM devices in past 3 years (as on RFP date) to Commercial Banks / Financial Institution in India. …… ……	**Annexure 02 - Eligibility Criteria** …… …… **D. Experience & Support Infrastructure** 1. The bidder **/ OEM** should have supplied, Installed and supported for at least -2- no's of HSM devices in past 3 years (as on RFP date) to Commercial Banks / Financial Institution in India. …… ……

Annexure 02 - Scope of Work with Technical Requirements Details

B. Technical Specification of HSM for UPI

The proposed HSM device should comply with technical specification as mentioned in the table below. If the make and model proposed by the bidder do not comply with technical specification given below, the bidder would have deemed not to be meeting the Technical requirements hence will be disqualified in technical bid evaluation.

Bidder should note that Technical specification given in the table below is based on the minimum requirements of Bank of Baroda. Bidders, however, may quote for hardware with higher specifications.

Sr. No.	Technical Specification for HSM for UPI SW Application	Bidder's Complied (Yes/No)	If yes, detail description how the solution/component would be compliant
1	**Make: Thales**		
2	**Model:**		
3	**Number of HSM Devices provided: 4**		
4	Speed: Minimum 2500 TPS/CPS (Transactions per second/Commands per second)		
General Aspects:			
5	HSM should have dual power source input, dual TCP/IP interface and dual connectivity support.		
6	Should support SHA-256 RSA 2048 Format or above. Capable to support DES and 3DES KEY lengths 112bit &168 bit and AES key lengths 128, 192 & 256 bits.		
7	Support multi-threading & multi-client so as maximum performance can be achieved.		
8	Should support following Crypto Graphic Standard: AES, DES and Triple DES Algorithms - Provide PIN encryption, PIN Authorization and message authentication capabilities.		
Management facilities:			
9	Support SNMP		
10	Utilization statistics - Health check diagnostic and error logs		
11	FIPS complaint HSM should have dedicated management Ethernet port		
Security Certification:			
12	Cryptographic module certified to FIPS: 140-2 Level 3		

Sr. No.	Technical Specification for HSM for UPI SW Application	Bidder's Complied (Yes/No)	If yes, detail description how the solution/component would be compliant
13	FIPS 140-2 level 3 and CC EAL4+		
14	SP800-90B,SP800-90C,BSI DRG.4		
15	FIPS compliant Random number generator		
16	FIPS approved algorithms		
Security features:			
17	Tamper resistance meeting requirements of CC and FIPS 140-2 Level 3		
18	Detection of cover removal in addition to Alarm triggers for motion, voltage and temperature		
19	Multiple alarm triggers for motion, voltage and temperature		
20	Device hardening - ability to disable functions not required by the host application		
21	DES and Triple-DES key lengths 112 & 168 bit		
22	AES key lengths 128, 192 & 256 bit		
23	RSA (up to 4096 bit)		
24	HMAC, MD5, SHA-1, SHA-2		
Key Features:			
25	Secure Key Storage and Generation for all key types used		
26	Secure Host communication using TLS or SSL		
27	PIN never appears in the clear outside of a tamper resistant security module as per PCI PIN security requirements		
28	Remote management and monitoring options.		
29	Safety and environmental compliances UL, CE, BIS, FCC, CSA, CE , VCCI RoHS2, WEEE		
Other Features:			
30	Must support cryptographic offloading and acceleration		
31	Should provide authenticated multi-role access control		
32	Must have strong separation of administration and operator roles		
33	Must have secure key wrapping, backup, replication and recovery.		

Sr. No.	Technical Specification for HSM for UPI SW Application	Bidder's Complied (Yes/No)	If yes, detail description how the solution/component would be compliant
34	Must support 2048, 4096 and 2048 bit RSA private keys, 256 bit AES keys on FIPS 140-2 Level 3 Certified Memory of Cryptographic Module		
35	Must support clustering and load balancing		
36	Should support cryptographic separation of application keys using logical partitions		
37	Minimum 4 x 1G with Port Bonding		
38	Asymmetric public key algorithms: RSA, Diffie Hellman, DSA, KCDSA, ECDSA, ECDH, ECOES.		
39	Symmetric algorithms: AES, ARIA, CAST, HMAC, SEED, Triple DES, DUKPT, BIP32		
40	Hash/message digest: SHA-1,SHA-2(224,256,384,512 bit)		
41	Support remote administration – including adding applications, updating firmware, and checking status from centralized Location		
42	Syslog diagnostics support		
43	Should be compatible to existing HSM "Safenet Luna SA 1700" for smooth migration		
44	There should not be any changes required in the application/hardware device currently integrated with existing UPI HSMs. There should not be changes required at Switch/Mobile Banking/UPI/eBanking or Credit Card switch required for integration.		
45	HSM should have Dual Physical lock		
46	Should have ability to regularly expand functionality via firmware or application upgrades.		
47	Should have physical and logical security features.		
48	Should adhere to all major industry standards, including FIPS-140-2 level 3, PCI-DSS, Qualified Signature or Seal Creation Device (QSCD) listing for eIDAS, Common Criteria EAL4+ (AVA_VAN.5 and ALC-FLR.2) against the protection profile EN 419 221-5 etc.		

Sr. No.	Technical Specification for HSM for UPI SW Application	Bidder's Complied (Yes/No)	If yes, detail description how the solution/component would be compliant
49	Should have multiple, redundant power supplies and ethernet ports to maintain functionality in the event that one of the either sources should fail.		
50	The solution must have added ability of being spread across multiple locations and managed as a group, synchronizing and load balancing all the units to maintain network functionality even if an entire data center were to lose connectivity		
51	Should support remote access technology with encrypted connection to maintain security in all configuration and remote key loading processes.		
52	Must maintain compatibility with wide range of host applications		

The bidder must enclosed the detailed specifications of proposed HSM together with all necessary components, software & accessories in the Technical Bid (Bill of Material), supported by Technical Literature/ Data sheet/ Product Catalogues/Brochures, etc. This is Mandatory for the bidders.