

## RFP for the Supply of Passive Components for the BIAL Network Infrastructure

### 1. Intent

BIAL wants to build a flexible, reliable and high performance network infrastructure for the transmission of voice, data and video with maximum investment protection. The cables and associated connecting hardware shall meet all applicable requirements specified in ANSI/EIA/TIA-568-B, C.1, C.2, C.3 C. Final or the latest series Specifications and International standard: ISO/IEC 11801 2nd edition (2002) and ISO/IEC 11801 Amendment 2 (2010).

The Structured Cabling System shall serve as a vehicle for transport of data, video and voice telephony signals throughout the network from designated demarcation points to outlets located at various locations should support 10GBase-T (10 Gigabit Ethernet).

### 2. Scope

1. Supply passive components (copper ) as per the standards and specifications stated in RFP
2. Provide Extended Warranty for 20 Years for entire supply
3. Provide Training on Implementation & Maintenance of cables and accessories to be used in structured Cabling to BIAL & it's subcontractor

### 3. Standards to comply

- |   |   |  |
|---|---|--|
| 1. ANSI/TIA-568-C.0 (2009)                          | - | Generic Telecommunications Cabling for Customer Premises                       |
| 2. ANSI/TIA-568-C.1 (2009)                          | - | Commercial Building Telecommunications Standard                                |
| 3. ANSI/TIA-568-C.2 (2009)                          | - | Balanced Twisted-Pair Telecommunications Cabling and Component Standard        |
| 4. ANSI/TIA-1005 (2009)                             | - | Telecommunications Infrastructure for Industrial Premises                      |
| 5. IEEE 802.3at (2009)                              | - | Power over Ethernet Plus   |
| 6. IEEE 802.3an (2006)                              | - | Physical Layer and Management Parameters for 10 Gbps Operation, Type 10GBASE-T |
| 7. IEEE 802.3af (2003)                              | - | Power over Ethernet (PoE) Standard   |
| 8. IEEE 802.3-1998 (1998)                           | - | Carrier Sense Multiple Access with Collision Detection (CSMA/CD)               |
| 9. ISO/IEC 11801 (2002)                             | - | Generic Cabling for Customer Premises  |
| 10. ANSI/IEEE Std 802.3-199 or ISO 8802-3: 1990 (E) | - | Access Method and physical layer specification                                 |
| 11. TIA-568-B.2-ad10                                | - | Augmented Category 6 or ISO 11801 Class EA Cables                              |

#### 4. Eligibility Criteria for Bidders

- a) The Manufacturer of the product (OEM) should be ISO 9001:2000 Process Certified for manufacturing. All products to be proposed for this project by the manufacturer should originate from its own factory and should be UL listed, UL Certified, comply with the environmental regulations EU RoHS.
- b) Bidder (prime) should be a company registered under the Companies Act, 1956 since last 3 years.
- c) Bidder should have minimum average turnover of more than 5 Crores for last three years
- d) The bidder must have at least 5 customer reference sites in India of minimum 1000 or more nodes installations. Customer references & Purchase orders must be attached along with the bid.
- e) The supplier shall be certified by the manufacturing company in all aspects of design, installation, and testing of the products described herein, and shall have a minimum of five (5) years' experience on similar Structure cabling systems. An Undertaking / Authorization certificate from the OEM is required to be furnished

#### 5. Technical Specifications

Structured Cabling Systems wiring is defined as all required equipment and cabling including hardware, termination blocks, termination patch panels, jacks, and data cable installed and configured to provide computer, data, and voice connectivity from each data or voice outlet to the network file server or voice network/switch designated as the service point of the local area network. All performance parameters -Attenuation, Pair -to-Pair and power sum NEXT, Pair and Power sum ELFEXT, Return Loss and Delay skew should be tested for using Channel (4 connector model at least) of Category 6a settings. It should be a single vendor solution and should ensure Optimum system performance. There should not be any Impedance mismatch problems among components of the cabling system. The complete system should be tested for CAT6a standard

##### a) Category-6a S/FTP, 4-Pair Cable

The insulation of characteristics of this S/FTP copper cable provided under this contract shall meet the latest NEC (National Electrical Code) and ICEA (Insulated Cable Engineers Association) specifications.

Category 6a S/FTP Characteristics:

Description	Non Plenum
UL Type	CMR
Gauge	23 AWG stranding, Bare Copper
Category 6a S/FTP	Screened Foil Twisted Pair
Insulation Material	Foamed Polyethylene
Inner Jacket Material	Flame retardant Polyethylene
Foil Shielding	Laminated Aluminum / Polyester
Outer Jacket	Low Smoke Zero Halogen
Maximum Pulling Strength	79 N

Nom. Velocity of Propagation	0.78c
Mutual Capacitance	< 56 nF/km
Dielectric strength conductor-conductor and conductor-screen (2 sec)	2.5kV DC
Tensile strength of sheath	> 9 MPa
Operating Temperature	-30° C to +60° C
Installation Temperature	+0° C to +50° C
Delay Skew	≤25ns / 100m Max @ 625 MHz
Input Impedance	100 ± 32Ω
Coupling attenuation	Type II. It is mandatory that the cable shall comply to circular cross section only.

**b) Patch Panel Specifications**

Patch Panel shall be all-metal and modular to provide greater design flexibility for high density installation including the ability to use punch-down termination on the back of the panel. It is mandatory that the Patch Panel is made out of Steel and with 16 gauge, textured powder coated paint to be made available in black or titanium color only.

1. Should be a 24 port modular Key Connect Shielded Patch Panel and 1 U
2. Rear Cable Management Bracket with strain relief and cable management unit
3. Bi-directional cable routing
4. Metallic high strength 19” and 1U height
5. Labeling window including labeling strip
6. Individual labeling sheet suitable for laser printers
7. Ground Wire Kit to be included for self-grounding latch for S/FTP cables
8. 19” mounting kit to be provided
9. Should be UL Listed

**c) Information Outlet Specifications**

1. Should be 10GX Shielded Key Connect Modular Jack, Category 6A, RJ45
2. Transmission Characteristics - Maximum 625 MHz
3. Shielded System 10GX, TIA Screened Category 6A , ISO Class EA, 10GBASE-T
4. Front Connection should be RJ45 type, Phosphor Bronze with 50u inch Gold over Nickel Plating
5. Rear Connection should be IDC type, Phosphor Bronze with Tin Plating over Nickel
6. Termination Connection and Durability:
  - a. Front Mated Connection 750 cycles
  - b. Rear IDC Connection 20 terminations
  - c. Cable/Connector Retention: 15 lbs.
  - d. Connector/Hardware Retention: 20 lbs.
  - e. Plug/Connector Retention: 11.250 lbs.
7. Dielectric Strength: 1,000 V RMS @ 60 Hz for 1 minute
8. Current Rating: 1.500 A
9. Insulation Resistance: 500 M-Ohm Minimum
10. Max. Contact Resistance: 20 m-Ohm
11. Termination Resistance: 2.5 m-Ohm

**d) Faceplate Specifications**

1. Faceplates shall be British Type which suitable for accommodate two outlets
2. Compatible Key Connect Modules, which is suitable to accommodate two workstation outlets for current and future network needs.

3. Faceplates should have label window with exchangeable label strips.
4. Suitable for flush mount and surface mount.
5. Faceplates to accept 2 no. of STP Jacks, with icons and labels for ease of identification with mechanical locking the port support
6. Should be made of high ABS
7. Should have options of various colours Codes like white, ivory, black etc.
8. Sturdy design for excellent durability and network protection
9. Fire-retardant plastic with UV stabilizer for protection against color degradation

#### e) Patch cord Specifications

1. Should comply with relevant cabling standards (ISO/IEC 11801, EN 50173, EN 50168 and EIA/TIA 568A/B)
2. Should be 10GX Shielded Patch cord, Bonded-Pair, 4 Pair, 24 AWG Solid, CMR, T568A/B-T568A/B
3. Insulation Material : PO - Polyolefin
4. Inner Jacket Material : PVC - Polyvinyl Chloride
5. Outer Shield Material:
6. Outer Shield Material : Shield Foil AL - Aluminium
7. Outer Jacket Material : PVC - Polyvinyl Chloride
8. Should have a Dielectric Strength: 1,000 V RMS @ 60 Hz for 1 minute, Current Rating: 1.500 A, Insulation Resistance: 500 M-Ohm Minimum, and a Maximum Contact Resistance: 20 m-Ohm
9. Materials Type :
  - a. Polycarbonate RJ45 Plug
  - b. Transparent Lexan Boot
  - c. Front Connection with Blade type and Phosphor Bronze with 50u inch Gold over Nickel Plating
10. Maximum Pull Tension: 11.250 lbs.
11. Minimum Bend Radius (Overall Cable): 2.200 in
12. Termination Interface - RJ45 Mated Connection 750 Cycles

## 6. System Certification

Upon successful completion of the installation and subsequent inspection from the manufacturer, BIAL shall be provided with a numbered certificate from the manufacturing company, registering the installation. Also it is mandatory that the manufacturer should provide the complete 'Operation and Maintenance Manual'. This will cover an as built drawings, final Bill of Material, Shop Drawings, Channel Test Reports, Delay Skew test carried using a calibrated tester, the certificate of which should also be included.

## 7. Material Warranty

The Product Warranty shall ensure against product defects, that approved cabling components exceed the specifications of EIA/TIA-568-B, C.1, C.2, C.3 C. Final or the latest series Specifications and International standard: ISO/IEC 11801 2nd edition (2002) and ISO/IEC 11801 Amendment 2 (2010) for Copper Channel, for a twenty (20) years period and shall cover the replacement or repair of defective products(s).

## 8. Technical Compliance

All bidders will have to provide a line wise sectional technical compliance, clearly stating the Compliance as below.

- a. Fully Complied - C
- b. Partial Complied - P
- c. Not Complied - NC
- d. Noted - N

## 9. Bid Submission

The offer must be submitted in two parts sealed separately as Part-I (Technical Bid) and Part-II (Commercial Bid) in separate sealed envelopes. Technical Bid should be submitted with softcopy (CD).

Part - I (Technical Bid) shall contain:

- Covering Letter
- Technical Compliance sheet
- Technical bid with full details including description of make & model of materials so as to enable technical assessment of the proposal.
- Lead time for delivery of entire BoQ
- Technical datasheets for the proposed components
- An Undertaking / Authorization certificate as mentioned under Eligibility Criteria
- Each datasheet and samples shall be identified with the manufacturer's name, part number, dimensions and configurations.
- UL Certificate for all the proposed Products
- Third party certificate such ETL, NEC, etc.,
- RoHS compliant Certificate
- Customer References and purchase order copies to prove the clause No:d in Eligibility criteria section No: 4
- Training schedule to installer and the BIAL ICT team.

Part -II (Commercial Bid) shall contain:

- Covering Letter
- price details
- Documents to prove the turnover for last three years
- Lead time for delivery of entire BoQ

Bidder to submit samples of all components quoted under the scope of this RFP.

### 10. Bill of Materials

Selected bidder is to supply the material in two phases. Phase 1 will be immediate delivery based on immediate PO. Quantity for Phase 2 will be assessed based on usage and second PO will be released for Phase 2 delivery.

Bill of materials						
Sl No	Supply Description	QTY			UoM	Remarks
		Total	Phase-1	Phase-2		
1	4 pair Cat-6a S/FTP Copper cable-500 mtrs	380	266	114	Roll	
2	Information Outlet-Shielded	3000	2100	900	ea.	
3	24 Port patch panel-Shielded	140	98	42	ea.	
4	White color face plate-Dual	2000	1400	600	ea.	Color of faceplate to be reconfirmed with ICT before delivery/manufacture
5	White color face plate-Quad	20	14	6	ea.	
6	Black color face plate-Dual	100	70	30	ea.	
7	S/FTP Patch cord-1 mtr	3000	2100	900	ea.	
8	S/FTP Patch cord-2 mtrs	3000	2100	900	ea.	
9	S/FTP Patch cord-10 mtrs	100	70	30	ea.	

### 11. Technical Evaluation Criteria

1	<b>Response To RFP</b>	<b>10</b>
A	Completeness of RFP submittal document	5
B	Response to queries	5
2	<b>Technical</b>	<b>90</b>
A	Submission of product Specifications/data sheet as per RFP	5
B	Submission of product samples as per RFP	5
C	Submission of UL Certificate for all the proposed Products	5
D	Submission of Third party certificate such ETL, NEC, etc.,	5
E	Submission of RoHS compliant Certificate	5
F	User Training	5
G	Submission of sectional technical compliance	5
H	Submission of System Certification	5
I	Comply to standards as per RFP	10
J	Comply 10GBase-T (10 Gigabit Ethernet) applications standards	10
K	Cable Specifications with data sheet	5
L	Patch Panel product Specifications with data sheet	5
M	Information outlet product Specifications with data sheet	5
N	Face plates product Specifications with data sheet	5
O	STP Patch cord product Specifications with data sheet	5
P	Confirmation on the extended warranty of 20 years (Minimum)	5
	<b>Total</b>	<b>100</b>

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## 12. RFP Time Schedule

The following timetable indicates the BIAL's intended schedule:

Description	Date	Comments/ Format
RFP Release	06-Jan-2012	
Pre-bid clarifications	07-Jan-2012 to 20-Jan-2012	
Receipt of Bid	27-Jan-2012	Strictly in accordance with the submission requirements detailed within this document
Technical bid Opening date	30-Jan-2012	