

Through PB website

**PRASAR BHARTI
(India's Public Service Broadcaster)
Director General : Doordarshan
Doordarshan Bhawan, Copernicus Marg
New Delhi -110001.**

Dated: 01/08/2022

Subject: Draft Technical Specifications for Digital Frame Synchronizer.

The Draft specification of the upcoming tender is enclosed herewith to offer comments, if any by prospective bidders/Firms/OEMs.

2. Bidders/OEMs are requested to provide information about available local content (Make in India) in respect of items listed in suggestive BOM along with budgetary quote.

3. Bidders may please submit the above detail on or before due date by e-mail to ddpurchase401@yahoo.co.in or at following Address.

Assistant Engineer
Room No. 403,
Directorate General: Doordarshan,
Doordarshan Bhawan, Copernicus Marg,
New Delhi -110001 (India)
Telephone: **011- 2311 4401/4403**

Specification For: Draft Technical Specifications for Digital Frame Synchronizer.

Specification no: SD 05/2022 Dated 11/07/2022.

Due Date to offer Comments: 16.08.2022

Encl.: As above (08 Pages)

Signed by Narendra Kumar
Choursiya
Date: 01-08-2022 13:57:39
(N.K. Choursiya)
Assistant Engineer
Doordarshan Directorate: Doordarshan

India's Public Service Broadcaster

DIRECTORATE GENERAL: DOORDARSHAN**Specifications for Digital Frame Synchronizer**

Specifications No.: SD 05 /2022

Dated: 11.07.2022

1. GENERAL

The specifications outlined in this document are for the procurement of Digital Frame Synchronizers for the purpose of synchronizing video with the station sync, reducing (FS) noise and adjusting levels of the video signals received from Satellite, Microwave, Outside Broadcast locations, etc.

2. ESSENTIAL FEATURES:

- (a) The offered FS should be from any reputed manufacturer, should be field proven and in use by leading broadcasters/media houses. The bidder should submit the list of the broadcasters to whom the quoted model has been supplied. The tenders without the proper user list shall liable to be rejected. The bidder should desist offering a model which is nearing obsolete/End of sale/discontinuation
- (b) Each FS should be a self-contained unit with a built-in redundant power supply.
- (c) They should accept SD-SDI, HD-SDI and 3G SDI video inputs.
- (d) Gen-locking and acceptance of Black burst as its reference input are essential features required.
- (e) Each FS should have front panel selection switches to select video inputs.
- (f) They should have front panel controls for Video Gain, Black Level, Chrominance Gain, Output H & V timing. Corresponding settings / parameters should be recorded in non-volatile memory. The front panel should have an LCD/LED display for enabling the menu selection and monitoring alteration of various parameters. The front panel should also have a facility to monitor live video sources.
- (g) The FS should have noise immunity adequate for locking to noisy inputs without unwanted freezing. It should have a facility to apply noise reduction, when required.
- (h) It should be able to Synchronize, Upconvert, Downconvert, Cross Convert, Legalize, Color Correct and Logo Insert.
- (i) The operation of the FS should achieve overall improvement in S/N ratio as compared to any incoming

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- (j) It should be capable of handling Analog Audio inputs besides AES and Embedded audio signals.
- (k) Input and Output Analog Audio Signals should be on XLR connectors. If required, necessary breakout cables should be offered.
- (l) The FS should include an "**Audio delay unit**" for Audio Delay adjustment to match video. It should automatically track the video processing delay in order to ensure video and audio are in sync.
- (m) For any loss of input signal the FS should switch to freeze on the last good frame of video or to black.
- (n) It should have an RS 232/ RS 422 Serial or Ethernet Port for Remote Control Operation.
- (o) It should also have 8 GPIO with configurable action on Freeze, Black, Video Input.
- (p) An indicative Bill of Material required can be seen in **Appendix-I**. The bidder is required to provide a complete list of equipment including accessories offered to comply with the specifications in the following proforma:

S.No.	Description/Name of the item	Brand	Model	Part No., if any	Qty.	Remarks

- (q) The equipment is being procured for various Doordarshan Centres (Consignee) as mentioned in **Appendix-II**.

3. TECHNICAL SPECIFICATIONS:

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S. No	PARAMETERS	PERFORMANCE
i.	Standard	3G-1080p, HD-1080/50i, 1.485 Gbps, SD-270 Mbps
ii.	Sampling rate	SD-SDI Y:13.5MHz, C: 6.75MHz HD-SDI Y:74.25 MHz, C: 37.125 MHz
iii.	Correction range	Full field
iv.	Video Inputs	1 or more 3G-SDI, HD-SDI, SD-SDI with Embedded Audio, Composite PAL on BNC
v.	Video Outputs	1 or more 3G-SDI, HD-SDI, SD-SDI with Embedded Audio on BNC
vi.	Reference	Black burst/Composite Video on BNC
vii.	Power Supply	230V \pm 5%, 50 Hz
viii.	Residual Jitter	SD:<0.2 UI, HD:< 1 UI
ix.	Serial I/O return loss	>15 dB up to 270 MHz
x.	Serial I/O level	800 mV \pm 10%
	Audio Inputs & Outputs:	
xi.	Type:	Analog & AES
xii.	Inputs	2x stereo analog inputs, up to 8x AES inputs
xiii.	Outputs	2x stereo analog output, up to 8x AES outputs

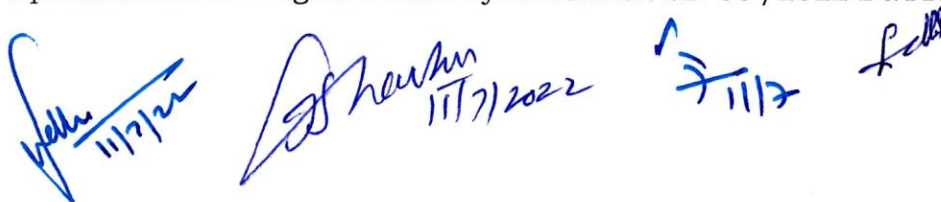
4. SOFTWARE:

All necessary software required for the proper working of the system should be supplied in original and be licensed to Doordarshan with perpetual validity.

5. COMPLIANCE:

- Authorization from principal manufacturer should also necessarily be submitted along with the bid.
- A point by point full compliance statement in respect of all parameters, from the principal manufacturers in the format given below, is to be part of the bid. Mere signature on the copy of DD specifications shall not be accepted as a compliance statement.

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The above information should be supported by technical literature / data sheets enclosed with the bid. Reference to the page number should be mentioned in the relevant column. Bids without compliance statement or with incomplete compliance statement are liable to be rejected at the sole responsibility of the bidder. Any deviation from specifications detailed in the compliance statement is to be highlighted separately.

Sr. No of DD specs.	DD specs.	Compliance (Yes/No)	Performance Fig. of equipment Offered.	Reference to the Page Number of enclosed literature	Deviations, in case of non-compliance	Optional items, if any, required to make the system Compliant to DD specs.	Features in the offered Product which exceed DD specs.	Remarks, if any
1.	2.	3.	4.	5.	6.	7.	8.	9.

- (c) A separate point by point compliance statement duly signed by the bidder in respect of all points laid down in the specifications for all equipment should be submitted as part of the bid in the above mentioned proforma.

6. DOCUMENTATION:

One set of technical and operation & maintenance manuals electronically for all the equipment are to be submitted along with the tender to facilitate the technical evaluation, otherwise the tender is liable to be ignored. The successful bidder will have to supply set of operation, service and maintenance manuals with respect to the equipment.

7. DELIVERY PERIOD:

The delivery period will be 03 months.

8. WARRANTY:

- The system should carry a warranty of three years from the date of accepted consignment at the consignee's premises. In the eventuality of any equipment including software failing during this period, such fault shall need to be rectified or the relevant part / equipment replaced free of cost to Doordarshan. The OEM will be required to give undertaking to this effect along with the bid.
- After sales service support for an additional 02 (two) years for repairs/maintenance/replacement of the offered system after the completion of warranty period should also be provided. The OEM will need to give an undertaking to this effect along with the bid.
- Warranty should cover all hardware, software and modules of the Specifications for Digital Frame Synchronizer. SD 05 /2022 Dt.11.07.2022

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- d) Bidders are required to submit details of after sales service arrangements for the equipment including that of infrastructural facilities available in India.

9. DEMONSTRATION:

If necessary, the firm may be asked for demonstration of the offered system as part of the technical evaluation. In such case the firm will have to make suitable arrangement for the demonstration of the offered system at Doordarshan Bhawan, New Delhi or in Delhi/ NCR on notice of a maximum of 15 days. Accordingly, the firm should be in readiness for demonstration.

10. INSPECTION:

The equipment shall be subjected to inspection by Doordarshan officials at New Delhi.

11. ENCLOSURES:

The bidder must necessarily upload the following documents along with the technical bid:

- a) Compliance statement with respect to all the points of the specifications duly signed by the OEM should be submitted for offered equipment/item(s) in the proforma mentioned in clause no. 5 (b). The reference to the page number of enclosed literatures for all features and technical specifications should be essentially mentioned in the relevant column of the compliance statement.
 - b) A separate point by point compliance statement duly signed by the bidder in respect of all the points laid down in the specifications for the offered equipment/item(s) in the proforma mentioned in clause no. 5 (c).
 - c) Authorization from principal manufacturer mentioned in clause no. 5 (a).
 - d) Undertaking for three years guarantee from OEM for the offered system as mentioned in Clause 8 (a).
 - e) Undertaking for after sales service support for additional 2 (two) years for repairs/maintenance of the offered system after the completion of guarantee/warranty period as mentioned in Clause 8 (b) by OEM.
 - f) Complete details of after sales service arrangements in respect of the offered equipment available in the country mentioned in clause no. 8 (d).
 - g) Technical manuals/detailed technical literature/catalogues for the offered equipment/item(s) for substantiating the model no. and technical specifications.
 - h) Model specific user list of the offered product.
 - i) Any other document mentioned elsewhere in the tender document.
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579239/2022/Studio Design Section H.C.C.D. be rejected in the absence of the above
enclosures with the sole responsibility of the bidder.

Appendix-I


BILL OF MATERIAL

Specifications for Digital Frame Synchronizer. SD 05 /2022 Dt.11.07.2022

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SI. Nos.	Detail of Items	Qty.
1.	Frame Synchronizers with redundant power supplies and other accessories	116 Nos.
2.	Operation manual/ User Guide/ Technical Manual/ Installation Manual etc.	116 Sets
3.	Service & Maintenance Manuals	116 Sets

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EQUIPMENT ARE BEING PROCURED FOR THE FOLLOWING

DOORDARSHAN CENTRES

Sl. No.	Zone	Location of Doordarshan Centre	Total Qty.
1.	East Zone	BHUBANESHWAR-DDK	4
2.		KOLKATA-DDK	6
3.		PATNA-DDK	4
4.		RANCHI-DDK	4
5.		GUWAHATI-DDK	4
6.		AIZWAL-DDK	2
7.		IMPHAL-DDK	2
8.		ITANAGAR-DDK	2
9.		KOHIMA-DDK	2
10.		SHILLONG-DDK	2
11.		AGARTALA-DDK	2
12.	North Zone	JALANDHAR-DDK	4
13.		SRINAGAR-DDK	4
14.		CHANDIGARH-DDK	4
15.		DEHRADUN-DDK	4
16.		JAIPUR-DDK	4
17.		LUCKNOW-DDK	6
18.		SHIMLA-DDK	2
19.		HISSAR-DDK	2
20.		JAMMU-DDK	2
21.		LEH-DDK	2
22.	South Zone	BANGALORE-DDK	4
23.		CHENNAI-DDK	6
24.		HYDERABAD-DDK	4
25.		TRIVANDRUM-DDK	4
26.		VIJAYWADA-DDK	4
27.		PORTBLAIR-DDK	2
28.		PUDUCHERRY-DDK	2
29.	West Zone	AHMEDABAD-DDK	4
30.		MUMBAI-DDK	6
31.		BHOPAL-DDK	4
32.		RAIPUR-DDK	4
33.		PANAJI-DDK	4
		TOTAL QTY.	116 Sets

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