TENDER DATA

Project title:	Appointment of a Service Provider to supply, deliver, and commission a Service Information Generator System for Digital Terrestrial Television (DTT) with Multiple Operators and Regions and Direct-to-home (DTH) linking networks for a period of three years.
Bid no:	SENT/046/2022-23

1. BACKGROUND

Sentech is a state-owned company and is the largest broadcasting signal distributor in South Africa. Sentech is a licensed Electronic Communications Network Service provider in South Africa. It currently operates many telecommunication networks for Satellite, Television, Radio, Internet and more. As such, Sentech is a global enabler of broadcasting and digital content delivery.

SENTECH's SI Generator System has reached its End of Life and End of Support. As a result, Sentech seeks to replace the system for its DTH, DTT and other future platforms, such as IPTV and OTT, which requires service information for end-user devices. The system must be interoperable with the Set Top Box Manufacturer's Middleware, conforming to DVB or other broadcast and broadband proprietary standards.

Sentech's intention with this tender advertisement is to select a preferred supplier for the DVB SI Generator system based on linking via satellite to its transmitter sites. DTH, DTT STBs and Professional Satellite Receivers. Sentech intends to establish a long-term supply relationship with the preferred supplier for a period of three (3) years. The services are required at SENTECH Radiokop and NASREC Disaster Recovery Site.

2. SUBMISSION OF BIDS and CLOSING

This Bid closes at the stipulated date and time as stated in SBD 1 Notice and Invitation to Bid. Bids must be submitted by hand to the Bid Administrator at SENTECH, Octave Road, Radiokop Ext 3, Honeydew, Johannesburg.

Bidders that choose to submit their bid documents before the closing date and time may do so during working hours only (08:30-15:30).

It is the Bidder's responsibility to ensure that their bid submissions reach the Bid Administrator before the bid closing time as no late submissions will be accepted.

Telegraphic, telephonic, telex, facsimile, e-mail and late Bids will not be accepted. Proposals may be opened in public. Bidders will be advised of the outcome by letter, facsimile or e-mail.

This is a two-envelope system for Bid Evaluation. Bidders must submit their proposal and all supporting documentation in a sealed envelope, clearly marked as follows:

Envelope One "Original Technical Proposal" and one "Copy of Technical Proposal" together with a soft copy in PDF format of an electronic medium e.g. USB etc. The soft copy will consist of a single PDF document containing the complete response. The envelope must contain all information and documents relating to the Bid. (Refer to list of returnable documents).

No Financial Information must be included in Envelope 1.

Envelope Two "Original Financial Proposal" (Contract Date and Pricing schedule/schedule of rates as applicable) together with 1 copy of "Financial Proposal" together with a soft copy in PDF format of an electronic medium e.g. Compact Disk (CD), USB etc. The soft copy will consist of a single PDF document containing the complete Financial Proposal.
Bidders are required to place the sealed **Envelope 1** together **with** the sealed **Envelope 2** into one sealed envelope or container. The sealed envelope or container must be marked with the following information:

- **For Attention**
- **HEAD OF SUPPLY CHAIN MANAGEMENT**
- **BID REFERENCE NO: SENT/046/2022-23**
- **TECHNICAL AND FINANCIAL PROPOSALS**
- **INSERT CLOSING DATE AND TIME**
- **BIDDER'S NAME AND ADDRESS**

Bidders that combine their Technical Proposal with the Financial Proposal (or any financial information) will be automatically disqualified and not be evaluated further.

The financial proposal will only be opened and evaluated should the technical proposal be found to be responsive, being that the technical proposal has met the minimum technical evaluation criteria that are set out in the Bid Documents.

The Bidders shall insert a table of contents and bind (ring bind or similar method) the proposal documents and verify the page numbers, as Sentech will not accept any liability with regard to any disputes arising from pages that are missing or duplicated in the aforementioned documents.

Bidders are required to complete and sign all the returnable documentation (refer to list of returnable documents) and initial all pages, drawings and brochures which are included in the reply as Sentech will not accept any liability with regard to any disputes arising from pages that are missing or duplicated in the aforementioned documents.

Late submissions will not be considered.

3. SIGN AND INITIAL

Bidders are required to complete and sign the Bid Forms where required and initial the bottom of all pages, drawings and brochures which are included in the submission as Sentech will not accept any liability with regard to any disputes arising from pages that are missing or duplicated in the aforementioned documents.

Only original signatures will be accepted.

4. COMPLETION OF BID DOCUMENTS

Bidders must ensure that they complete all sections of the Bid Documents as per the requirements in the Bid.

Bidders must use only the Bid documents provided by Sentech. Photocopying of the Bid document is permitted however Bidders must not retype or redraft the Bid documents.

5. COSTS OF PREPARING THE BID SUBMISSION

Bidders shall bare all costs associated with the preparation and submission of the proposals. Sentech shall under no circumstances be held responsible or liable for any costs incurred during the bidding process.

6. ADMINISTRATIVE RESPONSIVENESS CRITERIA

Bidders are required to ensure that they meet all the Administrative Responsiveness Criteria.

7. BBBEE CODES AT SENTECH

Sentech complies with the codes of good practice as prescribed by the DTI, to advance Broad Based Black Economic Empowerment.

8. Pre-qualification criteria

With the objective of advancing designated groups, the Bidding condition applicable to this Bid is _____(Specify targeted companies (EME / QSE) or minimum B-BBEE status level of contributor) as contemplated in PPPFA regulations, 2017 sub regulation 4(1). A Bidder must provide documentary evidence to support their compliance with this prequalification criteria. A Bidder that fails to meet any pre-qualifying criteria stipulated in this Bid document is an unacceptable Bid.

9. Subcontracting as a condition of Bid

The successful Bidder must subcontract a minimum of _____% of the value of the Contract to _____ (specify the designated group targeted) as contemplated in the PPPFA regulations, 2017 sub regulation 9(1);

10. Transformation Plan

A transformation plan is a record of activities an entity intends to undertake to improve its BBBEE Level through Ownership, Management and Control; Skills Development; Enterprise and Supplier Development and Socio-Economic Development.

Sentech reserves the right to request a BBBEE transformation plan with clearly defined timelines and milestones if the recommended Bidder does not meet Sentech's transformation goals. These milestones must be achieved over the term of the Contract. This transformation plan must be submitted within 10 working days from the written request, failing which Sentech reserves the right to withdraw its appointment of the preferred recommended Bidder.

11. LOCAL PRODUCTION AND CONTENT

In the case of designated sectors, where in the award of Bids, local production and content is of critical importance, such Bids will contain a specific bidding condition that only locally produced goods, services or works or locally manufactured goods, with a stipulated minimum threshold for local production and content will be considered.

Does this requirement fall under any designated sector as prescribed by the DTI?	Yes	No
If yes, specify the sector		
Specify minimum threshold applicable		

***Bidders must fill in the SBD6.2 for Local Content and Production**

12. EVALUATION CRITERIA

The evaluation criteria are stipulated in 18 below. It is the Bidder's responsibility to ensure that it has responded to the evaluation criteria. Failure to meet the evaluation criteria will result in the Bidder not being evaluated further. Bidders must ensure that they have included all supporting documentation required to support their response to the Bid.

13. BRIEFING SESSION

Should there be a compulsory briefing session for this Bid, Bidders must ensure that they attend the briefing session and sign the attendance register, as non-attendance or failure to sign the attendance register will automatically disqualify a Bidder from submitting a proposal for this Bid.

All questions raised by Bidders post the briefing session will be consolidated and shared with all Bidders at least seven (7) calendar days prior to closing.

14. CLARIFICATION

Enquiries related to Bid documents may be addressed to the Bid Administrator and Supply Chain Official as stated in SBD 1 Notice and Invitation to Bid.

15. BID EVALUATION METHOD

This Bid will be evaluated as described in the table below.

A 80/20 system will be followed for Technical and Price offer	**1. Stage 1 – Administrative Responsiveness Evaluation** All the Technical Proposals will be evaluated against the **Administrative responsiveness requirements** as set out in the list of returnable documents. **2. Stage 2 –Technical Evaluation** <u>Mandatory Eligibility Criteria</u> All the proposals fully compliant with the Administrative responsiveness compliance criteria will then be evaluated against mandatory eligibility criteria as set out in Section 19 below. The Bidders must be fully compliant (and supply referenced Proof of compliance) to be evaluated further. <u>Functional Eligibility Criteria</u> The proposals that COMPLY with the Mandatory evaluation criteria will be evaluated against the Functional Criteria. Only the Bidders that complied in full with ALL the Mandatory Criteria will be scored against the functional evaluation criteria in section 19.2 below. Bidders that score 92 points and more out of the possible 130 points will be evaluated further. Bidders who score 92 or more points and fail to present Proof and evidence for their response to Functional criteria will not be evaluated further. **3. Stage 3 – Price and Preference** Financial Proposals for Qualifying Bidders will be opened and evaluated. Bidder's financial offers and BEE certificates will be ranked according to price and preference points from the highest number of points to the lowest. **4. Stage 4- Risk Assessment** All the proposals fully compliant with the Mandatory, Functional and Pricing Evaluation Criteria will undergo a Risk Assessment. In the risk assessment, the Bidder will therefore be required to provide a DEMO/SAMPLE system to be tested on the SENTECH Head End Laboratory environment. The test will be to verify and authenticate the Mandatory Evaluation Criteria. Failure to pass the Risk Assessment will disqualify the Bidder.

16. ADMINISTRATIVE RESPONSIVENESS REQUIREMENTS

To be administratively responsive, Bidders must ensure that they meet all the below mentioned criteria. Bidders that do not meet all the below mentioned criteria may not qualify to be awarded the Bid. Sentech reserves its rights in respect of the below criteria.

- Complete and return all documentation stipulated in the LIST OF RETURNABLE DOCUMENTS.
- All correspondence must be in English.
- Bidders must fill in all sections of this document (where applicable).
- **BLACK INK** must be used when completing the Bid documents.
- Bidders must use only the Bid documents provided by Sentech. Photocopying of the Bid document is permitted however Bidders must not retype or redraft the Bid documents.
- All corrections must be initialled. The use of corrective fluid is strictly prohibited.
- Bidders are required to fill in and sign the Bid Forms and initial all pages, drawings and brochures which are included in the reply as Sentech will not accept any liability with regard to any disputes arising from pages that are missing or duplicated in the aforementioned documents.
- Bidders must complete an attendance register at each compulsory site meeting attended.
- Appointment of a Bidder will be subject to signing, declaration and submission of SBD 1, 3.1, 3.2,
  3.3, 4, 5, 6,1, 6.2 8, and 9 depending on applicability.
- Complete and sign the Contract Data.
- Should this be a 2 envelope or 2 stage system, Bidders MUST separate the technical proposal from their financial proposal. The technical and financial proposals must be placed in two separate sealed envelopes.

17. AUTOMATIC DISQUALIFICATION

Sentech reserves the right to automatically disqualify Bidders from being awarded this Bid. The following will lead to automatic disqualification:

- Failure to submit a financial proposal, if required.
- The Bidder is or has been involved in any act of corruption or fraud or bribery or collusion or attempt to influence any employee of Sentech to award this Bid or any other Bid to it.

18. TECHNICAL RESPONSIVENESS COMPLIANCE

The Technical Evaluation will encompass the evaluation of:

- Mandatory Criteria
- Functional / Technical Criteria
- Risk Assessment Evaluation

19. TECHNICAL EVALUATION CRITERIA

19.1 Mandatory Eligibility Criteria

The follow in criteria are mandatory to ALL BIDDERS:

No	Mandatory Eligibility Criteria	Comply Y/N?	
19.1.1	**General Technical Requirements**		
19.1.1.1	**System Integration** The Tenderer will ensure that the equipment supplied is integrated into the head-end as appropriate.		**Provide a reference page number in your proposal as Proof of evidence**
19.1.1.2	**Support** The Tenderer must commit to an SLA contract term of at least three(3) years after the warranty and guarantee a hardware replacement within three(3) years or more if the servers/hardware reach their end-of-life and end-of-support.		**Complete Pricing in Part C2 of the Contract Data as Proof and provide a reference page number in your proposal as Proof of evidence**
19.1.2	**Special Technical Requirements**		
19.1.2.1	**Ability to Meet Project Objectives** • Supply an off-the-shelf field-proven solution • Specify where the proposed solution is operationally deployed and when the equipment was put into operation • Capable of replacing the current SI Generator system without the need to replicate content on the distribution link • Demonstrate the Proof of concept and overall system stability • Implement the system in the production live platforms in the Head End production and Disaster Recovery site.		**Provide a reference page number in your proposal as Proof of evidence**
19.1.2.2	**Compliance With DVB Specifications** Equipment offered must comply and generate MPEG/DVB-compliant PSI/SI tables following DVB Standards, - DVB SI – ETSI EN 300 468 V1.16.1 (2019-05) - Specification for Service Information (SI) in DVB systems - DVB SI – ETSI TS 101 211 V1.12.1 (2013-12) - Guidelines on implementation and usage of Service Information (SI) - DVB PI - EN 50083 - Interfaces for CATV/SMATV Headends and similar Professional Equipment - DVB M - ETSI TR 101 290 - Measurement guidelines for DVB systems - DVB DATA - ETSI EN 301 192 V1.7.1 (2021/08) - Specification for data broadcasting - DVB SI – ETSI TS 101 162 V1.9.1. (2020/07) - Allocation of Service Information (SI) codes for DVB systems - DVB MPEG – ETSI TR 101 154 V1.4.1 (2000/07) Implementation guidelines for the use of MPEG-2 Systems, Video and Audio in Satellite, cable and terrestrial broadcasting applications - ITU-T Recommendation H.222.0, ISO/IEC 13818 - DVB ETSI TS 102 034 V2.1.1, Transport of MPEG-2 Based Services over IP-Based Networks.		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**

No	Mandatory Eligibility Criteria	Comply Y/N?	
	Interface to Head End Multiplexers must be DVB-MPEG-TS over IP with Multicast (UDP or RTP options) of 188 or 204-byte packets.		
19.1.2.3	**Equipment Interface** • TS inputs on the SI Generator equipment shall be provisioned on GbE ports for redundancy configuration and incoming broadcaster streams. • TS outputs on the SI Generator equipment shall be provisioned on GbE ports for redundancy configuration and outgoing streams. • The command and control or management interface shall be RJ45 on at least 100bT Ethernet ports. **NB: It is recommended and advantageous to supply a server with PCI or PCIe slots where connection interfaces are field upgradable.**		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**
19.1.2.4	**Redundancy** • Fully redundant equipment for the SI Generator must be proposed. • Redundancy between the primary and secondary GbE I/O ports from the Primary and Secondary Chassis must be provided. The MPEG-TS Multiplexers will perform redundancy switching of the SI Generator streams. • Head-end redundancy switching must be automatic and seamless with no manual intervention. The process must be specified if a separate management system is required to perform this function. • Prepare the system for redundancy configurations and have a watchdog application to ensure high availability and allow the automated restart of processes and services. • Ensure Regular serialised file backup in a *one-on-one* redundant architecture with SENTECH TS Multiplexers, affording a fail-safe configuration upgrade procedure. • Ensure Regular serialised file backup in a *Cross-Connect* redundant architecture with SENTECH TS Multiplexers, affording a fail-safe configuration upgrade procedure.		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**
19.1.3	**System Technical Requirements**		
19.1.3.1	Supply an integrated editor, generator, scheduler and spooler for DVB SI (Service Information) and MPEG PSI (Program Specific Information) tables		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**
19.1.3.2	Must support Logical Channel Numbering (LCN) and service ID mapping, not limited referencing in the Network Information Tables. - Descriptor Tag x83 is to be used at a minimum.		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page**

No	Mandatory Eligibility Criteria	Comply Y/N?	
			number in your proposal as Proof of evidence
19.1.3.3	Enable operators to schedule PSI/SI information, dependently or independently from each other, via a clear and organised GUI. **The ability to copy, paste and edit a DVB SI Table with appropriate descriptors in the first loop and secondary loops is required at a minimum.**		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**
19.1.3.4	Enable operators to schedule DVB EIT descriptors at the event and sub-event level and allow altering the content of the EIT Present/following during the event's lifespan.		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**
19.1.3.5	Allow defining specific descriptors at a higher level; for example, the Network Name_descriptor occurring in the NIT does not have to be defined for each network group. Instead, it is possible to define a *default* version at the network level so that each Network group subsequently inherits this descriptor version.		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**
19.1.3.6	**EPG Schedule - DVB file import** Support the automatic import of third-party scheduled files—fully automated generation and multiplexing of EIT tables containing descriptors.to various network groups, transport streams/PLP and services. - Allow third-party providers to upload the EPG Schedule information using DVB files (any compatible file format is acceptable) - Any supported file transfer protocol is acceptable (e.g. FTP, SFTP, etc.) - Every imported schedule file must be associated with an import service to be processed by the EPG-DVB Aggregator - Compose a response log file for successful or non-successful imports - Exchange the schedule response log files with third-party providers - Archive all successfully imported files for tracking which schedule files have been delivered		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**
19.1.3.7	**EPG Schedule – MPEG-TS EIT Aggregation** Support the unattended, automatic import of third-party schedule information—fully automated generation and multiplexing of EIT tables containing descriptors to various network groups, transport streams/PLP and services. - Extract schedule information and descriptors conveyed in the EIT tables (both present/following) from an **IP-Multicast Transport Stream feed** - Extract SDT information and descriptors, and the running status is extracted from the received SDT Table(s) depending on the configuration settings from an **IP-Multicast Transport Stream feed**		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**

No	Mandatory Eligibility Criteria	Comply Y/N?	
19.1.3.8	**Table Generator** Generate the MPEG PSI tables PAT, PMT, CAT and DVB SI tables NIT, BAT, SDT, EIT (present/following and schedule) and TDT/TOT. Both actual and other tables can be generated with control over the occurrence of descriptors. For example, this allows operators to save bandwidth on the EIT other tables by having fewer descriptors than the actual version.		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**
19.1.3.9	The system must exclude or include SI Other tables from other Network Groups and Transports in the current/actual Transport Stream (e.g. exclude SDT other or EIT Other from actual TS).		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**
19.1.3.10	Allow PID value Offset in Decimal or HEX from the defined DVB SI Table PIDs.		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**
19.1.3.11	**BAT – Service Mapping** - Allow the creation of multiple BAT Tables - Allow mapping and grouping of Networks, Transport Streams and multiple services to separate BAT Tables.		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**
19.1.3.12	**Table Cycler** Allow creation of table cycler components Allow manually controllable cycle rates. Allow mapping and grouping of Networks and Transport Streams to separate table cyclers.		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**
19.1.3.13	**IO Board Ingest and Playout** - The IP input/output sockets must be **jitter tolerant** and allow input or playout of **MPEG TS streams at variable and constant bitrates.** - Support IP multicast playout through GbE ports - All TS Playout shall be IP Multicast, compliant with DVB ETSI TS 102 034 V2.1.1, Transport of MPEG-2 Based Services over IP-Based Networks.		**Attach evidence (manuals, user guides or datasheets, etc.) and provide a reference page number in your proposal as Proof of evidence**

NOTE: Bidders that do not comply with all the above criteria will not be evaluated further.

19.2 Functional Criteria

Functional criteria are mandatory for ALL BIDDERS to respond. The provided solutions' functional capability and capacity must be integrated with SENTECH technical personnel **during the contract duration**. SENTECH and the Bidder will conduct system integration tests on the SENTECH Production Facilities upon fully developing the functional criteria. **There are no network tests for Functional criteria during risk assessment evaluation. Tests will be conducted in the** SENTECH Head End Laboratory**, and only mandatory criteria will be considered for risk assessment.**

Functionality Criteria Evaluation for SI Generator System				
Item No.	Description of functional criteria evaluation	Weighting Factor		Proof required or evidence
		Max. Score Per Functional Criteria	Weighting Per Functional Criteria	
19.2.1	**General Technical Requirements**			
19.2.1.1	**Environmental** **Environment:** The equipment operates at any altitude up to 2 800 metres above mean sea level, room temperature from 0°C to +45°C and relative humidity from 5% to 90% non-condensing. (Point = 1) **Power:** 230V A.C.± 15%, single phase 50Hz. The equipment protected against lightning-induced transients survives and recovers to a normal operational state after a prolonged power dip or "brownout". (Point = 1) **Safety:** Equipment Plug Power Cord must conform to SANS IEC IEC C13 Socket to BS 446 or Straight IEC C13 Socket to Straight IEC C14, at a minimum of 2m. (Point = 1) **Fire:** Materials used for the equipment should be flame retardant. Heat dissipation of PCB-mounted devices must be such that no component desoldering occurs should the room temperature rise above 45°C. (Point = 1) **EMC:** Provide a complete list of specifications complied with. Equipment shall meet at least EN 55022 and EN 55024. (Point = 1) **Equipment Layout:** Physical connections shall be on the rear of the equipment. The user interface and Common Interface are on the front of the equipment. The equipment is rack mountable in a standard" 19-inch" rack (IEC60297). All equipment dimensions must be specified. (Point = 1) • Non-Compliant (Points allocated = 0) • Partially compliant with product sheets or certifications (Points allocated = 4) • Fully compliant with product sheets or certifications (Points allocated = 6)	6	5%	Provide product Sheets, Datasheet sheets or Proof of certification
19.2.1.2	**Operation Manual** Equipment must be supplied with at least one Operations manual (or manual set) written in English, describing installation, operations and fault finding with a complete list and meaning of all error messages. The manual must also describe, at least to block diagram level, the operation of the equipment offered. (Point = 2) Where modules included in the Tenderer's equipment are sourced from third party suppliers, e.g. Interface Adaptors, full technical details of such modules must be included with the system documentation. (Point = 2)	4	3%	Provide Operation Manual and full technical details

Functionality Criteria Evaluation for SI Generator System				
Item No.	Description of functional criteria evaluation	Weighting Factor		Proof required or evidence
		Max. Score Per Functional Criteria	Weighting Per Functional Criteria	
19.2.1	**General Technical Requirements**			
	• Non-Compliant (Points allocated = 0) • Partially compliant with Operation Manual and technical details (Points allocated = 2) • Fully compliant with Operation Manual and technical details (Points allocated = 4)			
19.2.1.3	**Support** Guarantee adequate product support, software upgrades and spare keeping for ten(10) years after the warranty expiry of the last delivery of the equipment supplied. (Point = 2) Specify the maximum turnaround time for equipment repair. Turnaround time shall not exceed ten(10) working days after receipt of faulty equipment. (Point = 2) End of Sale and End of Support announcements shall be made six months before such event. (Point = 2) Offer an annual maintenance and support programme for equipment offered. (Point = 2) • Non-Compliant (Points allocated = 0) • Partially compliant with an official letter or a sample of the SLA Agreement (Points allocated = 4) • Fully compliant with an official letter or a sample of the SLA Agreement (Points allocated = 8)	8	6%	Provide an official letter or a sample of the SLA Agreement
19.2.1.4	**Warranty** If there are defects arising from the failure of goods to meet the specifications within the period specified in the Contract, or if no period is specified within 12 months of the date of delivery, the Contractor shall replace or repair the defective item at his expense or shall refund Sentech such costs as Sentech may incur in replacing such defective item. The Contractor shall also bear the cost of transporting replaced/repaired items to the place of destination. (Point = 4) Provide an option to offer SENTECH an extended warranty of at least three (3) years. (Point = 4) • Non-Compliant (Points allocated = 0) • Partially compliant with an official warranty letter (Points allocated = 4) • Fully compliant with an official warranty letter and extended warranty option (Points allocated = 8)	8	6%	Provide an official warranty letter
19.2.1.5	**Delivery** Prices must be as specified in Part C2 of the Contract Agreement. Guaranteed delivery time after receipt of an order must be indicated in the tables in	8	6%	Complete delivery details on Part C2 of

Functionality Criteria Evaluation for SI Generator System				
Item No.	Description of functional criteria evaluation	Weighting Factor		Proof required or evidence
		Max. Score Per Functional Criteria	Weighting Per Functional Criteria	
19.2.1	**General Technical Requirements**			
	Part C2. Delivery may not exceed eight(8) weeks from receipt of the order. • Delivery exceeds 8 Weeks timeline (Points allocated = 0) • Delivery meets the 8 Weeks timeline (Points allocated = 4) • Delivery improves the 8 Weeks timeline (Points allocated = 8)			the Contract Agreement
19.2.1.6	**Quantity** Quote both a unit price as well as for a quantity as indicated in Part C2 of the Contract Agreement. (Point = 1) Propose a non-redundant test (laboratory) system and Disaster Recovery site. (Point = 1) • Non-Compliant (Points allocated = 0) • Partially compliant (Points allocated = 1) • Fully compliant (Points allocated = 2)	2	2%	Complete Part C2 of the Contract Agreement
19.2.1.7	**Training** Offer full training to Sentech technical staff to operate and maintain all equipment. Training is to be provided at Sentech's offices in Johannesburg, South Africa. Allow for at least three days, covering the theory of system operation, operation and maintenance of SI Generator site equipment. Make provision for at least 20 trainees. • Non Compliant (Points allocated = 0) • Compliant with at least three days and 20 Trainees (Points allocated = 4)	4	3%	Complete Part C2 of the Contract Agreement
19.2.1.8	**Installation and Commissioning** Offer installation and commissioning of the equipment at the Johannesburg and Nasrec head ends. Sentech will provide rack space. Final acceptance will only occur after demonstrating full technical and operational compliance (i.e. fully debugged). • Non-Compliant (Points allocated = 0) • Compliant with Installation and Commissioning completed (Points allocated = 8)	8	6%	Propose an implementation plan
19.2.1.9	**System Configuration** Sentech requires elegant (not overly complicated) solutions. Preference will be given to systems which require lower equipment counts at the head end. • Non-Compliant (Points allocated = 0) • Overly complicated Solution (Points allocated = 4) • Less complicated Solution (Points allocated = 8)	8	6%	Provide a complete solution design. Show the number of equipment involved

Functionality Criteria Evaluation for SI Generator System				
Item No.	Description of functional criteria evaluation	Weighting Factor		Proof required or evidence
		Max. Score Per Functional Criteria	Weighting Per Functional Criteria	
19.2.1	**General Technical Requirements**			
19.2.2	**Special Technical Requirements**			
19.2.2.1	**Equipment Interface** TS inputs on the SI Generator equipment with ASI support are required as an option for incoming broadcaster feeds, SDT and EIT Extraction and redundancy configuration and outgoing streams. (Point = 4) ASI inputs and outputs must work in conjunction with IP inputs and outputs. (Point = 4) • No ASI Input Support (Points allocated = 0) • 3 x ASI Input and IP Support per Chassis (Points allocated = 4) • 8 x ASI Input and IP Support per Chassis (Points allocated = 8) **NB: It is recommended** and **advantageous to supply a server with PCI or PCIe slots** where connection interfaces are field upgradable.	8	6%	Provide a complete solution design. Show the number of input interfaces
19.2.2.2	**System Capacity** Specify the maximum data rates supported by each type of equipment. The minimum data rate must exceed the maximum supported by TS streams, Services and EIT Aggregators specified in Table 3 in Part C3 of the Contract Agreement. (Point = 4) Specify the maximum number of streams the equipment can support. The minimum number of transport streams supported must exceed 150 per type of equipment specified in Table 3 in Part C3 of the Contract Agreement. (Point = 4) • Non-Compliant (Points allocated = 0) • Partial Compliant: The minimum data rate or minimum number of streams per equipment does not comply (Points allocated = 4) • Fully Compliant: The minimum data rate and minimum number of streams comply (Points allocated = 8)	8	6%	Provide product Sheets, Datasheet sheets
19.2.2.3	**Monitoring and Supervisory** The SI Generator equipment should analyse inputs, monitor all incoming schedules and convey the information to the network management platform (NMS). (Point = 4) Control the handling of PSI/SI for each transport stream/PLP reaching the end-user devices. The system should be able to pass locally (Sentech head-end) or externally generated PSI/SI. (Point = 2)	32	25%	Provide Operation Manual or full technical details

Functionality Criteria Evaluation for SI Generator System				
Item No.	Description of functional criteria evaluation	Weighting Factor		Proof required or evidence
		Max. Score Per Functional Criteria	Weighting Per Functional Criteria	
19.2.1	**General Technical Requirements**			
	It would be advantageous for the platform to compose a transport stream of services selected from different input streams and generate some or all of the PSI/SI tables for the output. The platform should monitor all playout schedules at each transport stream per service output, provided that it can cope with channel line-up changes. (Point = 4) It should be possible to save the configuration and recover from the last active configuration in case of system failure. (Point = 2) Upon any channel line-up change, i.e. adding, deleting or changing a service name or descriptor values, there should be a means to reconfigure the system which is not cumbersome and error-prone and does not require more than a few minutes to complete. (Point = 2) Cold standby redundancy, with manual Primary and Secondary Hardware synchronisation. (Point = 2) The equipment should operate at High Performance and Responsiveness with sufficient memory allocation. (Point = 2) The equipment should be compatible with at least SNMP version 2. (Point = 2) The equipment should log and store application, event and operational error messages. (Point = 2) The supplier shall make the SNMP MIB (Management Information Base) files available to enable Sentech to determine which parameters can be monitored and controlled. (Point = 2) The equipment shall be able to send traps to a higher-level operations management platform (i.e. NMS). (Point = 2) Equipment shall, in addition, support web browser-based remote control and monitoring. This shall allow complete equipment configuration, control and monitoring. (Point = 2) Equipment must also be equipped with an open contact relay summary alarm. (Point = 2) SNMP is preferred for the configuration of equipment. If any proprietary protocol is used as a standalone or in conjunction with SNMP, it should be indicated, and all protocol details will be made known to Sentech. (Point = 2) • Non-Compliant (Points allocated = 0) • Partially Comply with Insufficient evidence (Points allocated = 8)			

Functionality Criteria Evaluation for SI Generator System				
Item No.	Description of functional criteria evaluation	Weighting Factor		Proof required or evidence
		Max. Score Per Functional Criteria	Weighting Per Functional Criteria	
19.2.1	**General Technical Requirements**			
	• Partially Comply with Sufficient evidence (Points allocated = 16) • Fully Compliant with Sufficient evidence (Points allocated = 32)			
19.2.2.4	**System Availability** The MTBF (mean time between failures) for each proposed equipment type must be provided. MTBF must also be specified for the system as a whole. Indicate if these are calculated or historical values. Calculate the effect on MTBF for equipment redundancy where proposed. • Non-Compliant (Points allocated = 0) • Fully Compliant (Points allocated = 2)	2	2%	Provide data sheets or full technical details
19.2.2.5	**OTT EPG Integration** Provision stream ingests and playout for extended EPG and metadata targeting OTT platforms (e.g. Web, Mobile application, etc.) using API, XML, JSON, etc. • Non-Compliant (Points allocated = 0) • Fully Compliant (Points allocated = 4)	4	3%	Provide full technical details
19.2.2.6	**Company Experience (Past Performance) In similar SI Generator Deployments** Non-submission or 0 projects (Points allocated = 0) Poor: Limited experience (1 project) (Points allocated = 5) Satisfactory: Reasonable experience (2-3 projects) (Points allocated = 10) Good: Adequate experience (4-5 projects) (Points allocated = 15) Very Good: Outstanding experience 6+projects) (Points allocated = 20)	20	15%	Project-specific client letters. Contactable references. *See table 1 below*
Total Number of Maximum Points		130	100%	
Points achieved after Functional Evaluation				

Table 1: Functional Criteria

Total minimum qualifying functional score is # 92 points. A Bidder must score more than 92 points to be evaluated further.

19.3 Optional Items

Bidders are to indicate if these features/products/functionally are/are not available in their current product range or if they are part of future development. Please note that this section for Optional Criteria **is not for evaluation purposes** but for information purposes.

No	Optional Criteria	Available Y/N?	Comment
19.3.1	**Future Development** Flexible add-in architecture for additional descriptors and DVB Standardised tables: through this architecture, one can easily extend the natively supported set of descriptors (e.g. generate DVB-INT, DVB-NIP and DVB-I tables with their descriptors)		
19.3.2	**IO Board and Playout** Support a Network Adaptor for TCP/IP Output to deliver Streams (with SI Tables) using unicast session protocols.		
19.3.3	**External trigger** Supports external triggering of events as opposed to schedule-based triggering		

19.4 Risk Assessment

Risk Assessment: All bids that pass the Mandatory, Functional Criteria and Pricing Evaluation will undergo a risk assessment based on the following framework:

- Any aspects that emanate from the bidders' responses or received from past references
- The Bidder will be required to provide a SAMPLE UNIT/S which would be TESTED on the SENTECH Laboratory environment. The test will be to verify and authenticate the Mandatory Evaluation Criteria.
- Sentech may disqualify bidders based on the outcome of the risk assessment.

20. Evaluation of Price and Preference

This Bid will be evaluated on a points system based on weighted average score for Price and Preference as per Preferential Procurement Framework Act of 2000 (Act 5 of 2000).

21. Preference Point allocation – 80/20

Price / Preference	**Weighting percentage**
Preference:	**20%**
Price:	**80 %**
Total must equal:	**100%**

80/20-point scoring system			
Preference: 20 Points		**Price: 80 points**	
Other: B-BBEE Status Level Contributor			
B-BBEE Level	Number of Points	Price:	100 % (of 80)
1	20	Quality / Functionality:	0 % (of 80)
2	18		
3	14		
4	12		
5	8		
6	6		
7	4		

8	2		
Non-Compliant contributor	0		
		Total must equal:	**100% (of 80)**

22. Price Calculation 80/20

The following formula will be used to calculate the points for price.

$$Ps = 80 \left[1 - \frac{(Pt - Pmin)}{Pmin} \right]$$

Where:

Ps	=	Points scored for price of bid under consideration
Pt	=	Rand value of bid under consideration
Pmin	=	Rand value of lowest acceptable bid

22. Declaration of Authority

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this Bid Data is understood and all requirements will be adhered to.

Name of Bidder	Signature	Date	Designation

TABLE 1: REFERENCES

Please complete the customer reference table and relevant Contact telephone number and attach reference letters.

Customer		Service Provided	Contact Person	Contact no. tel.	Contractual commencement date	Contractual completion date
1						
2						
3						
4						
5						

Name of Tenderer	**Signature**	**Date**