**Техническое задание**

**на поставку аппаратных средств и программного обеспечения для расширения 2G/3G/4G/CN сетей ZTE**

|  |  |  |  |
| --- | --- | --- | --- |
| **Наименование товаров** | **Подробное описание товаров** | **Срок поставки** | **Кол-во, шт.** |
| Аппаратные средства и программного обеспечения для расширения 2G/3G/4G/CN сетей | Комплектующие к базовым станциям/Core Network и программное обеспечение | Не более 90 (девяноста) дней с момента осуществления Покупателем авансового платежа | **1** |

**Техническое задание**

**на закупку расширения действующей телекоммуникационной сети в сегменте ZTE.**

|  |  |
| --- | --- |
|  | **Существенные требования/ Технические спецификации:** |
| **№ п/п** | **Наименование закупаемых товаров (оборудования)** | **Кол-во** | **Note** |
|  | **Новое оборудование контроллер 3G базовых станции RNC ZXUR9000 (10 000 Эрл, 4 500 Мб/с):** |
| 1 | Величина голосовой нагрузки в течение одного часа (Эрл) | 10 000 |  |
| 2 | Емкость IuPS/IuCS канала (Мб/с) | 4 500 |  |
| 3 | Одновременная поддержка количества абонентов  | 10 000 |  |
| 4 | RNC должен содержать количество полок  | 3 |  |
| 5 | Межполочные коммутационные платы (EGBS2a, EXFS1a) должны быть сконфигурированы в режиме: 1+1  |  |  |
| 6 | Плата EXFS1a должен поддерживать GPS синхронизацию и иметь GPS-интерфейс |  |  |
| 7 | IuPS/IuCS интерфейсные платы должны поддерживать оптические 10GE в количестве: 6 шт.  |  |  |
| 8 |  IuPS/IuCS интерфейсные платы должны поддерживать электрические GE в количестве: 2 шт.  |  |  |
| 9 | Все затраты на конфигурацию и настройку оборудование берет на себя поставщик |  |  |
|   | **Функция Carrier Aggregation LTE на базовой станции:** |
|  | Количество eNodeB LTE поддерживающих функцию Carrier Aggregation 10+10 МГц (eNodeB) | 124 |   |
|  | Количество секторов eNodeB LTE поддерживающих Carrier Aggregation 10+10 МГц (Sector) | 372 |  |
|   | **Расширение 3G/4G оборудования до 6 секторов на базовой станции:** |
|  | NodeB (3G 2100 WCDMA up to S2/2/2/2/2/2; additional 192UL CE, 192DL CE; RRU-2100 Mhz; UL mode on the one RRU; Output power for carrier 20 watt; DBS) (RRU) | 135 |   |
|  | eNodeB (4G 2100 LTE up to S1/1/1/1/1/1; additional 75 Mbps; RRU-2100 Mhz; UL mode on the one RRU; Output power for carrier 20 watt; DBS) (RRU) | 135 |  |
|  | Antenna HBXX-3817TB1-A2M 6 sectors; 1710~2170MHz; gain:19dBi; horizontal beamwidth:2\*33°; downtiltand degree:0-10° | 135 |  |
|  | Поставка должна содержать электронный вариант паттерна антенны HBXX-3817TB1-A2M формата (\*.pafx), (\*.xml). Patterns for antenna HBXX-3817TB1-A2M in format \*.pafx or \*.xml | 1 |  |
|   | **Расширение 2G/3G оборудования до 4G базовой станции:** |
|  | eNodeB RRU (4G 800 LTE S1/1/1; RRU-800 Mhz -LTE FDD band-20, Output power for carrier 20 watt, DBS) | 75 |  |
|  | eNodeB RRU (4G 1800 LTE S1/1/1; RRU-1800 Mhz -LTE FDD band-3 - GL mode on the one RRU; Output power for carrier 20 watt, DBS) | 75 |  |
|  | eNodeB RRU (4G 2100 LTE S1/1/1, RRU-2100 Mhz, LTE FDD band-1, UL mode on the one RRU, Output power for carrier 20 watt, DBS) | 45 |  |
|  | Triple-band antenna APXVERR26-C-A20: 790~960MHz/ 1710~2170MHz/ 1710~2170MHz; gain:17dBi/17dBi/17dBi; horizontal beamwidth:65;Cross Polarization (6ports); 2-12 deg, with RET | 15 |  |
|  | Patterns for antenna APXVERR26-C-A20 in format \*.pafx or \*.xml | 1 |  |
|  | Dual Band Remote Tilt Panel antenna LDXX-6516DS-A2M：frequency band:790~960MHz;gain:17dBi; horizontal beamwidth:65; Cross Polarization (4 ports); 0-8 deg, with RET | 15 |  |
|  | Patterns for antenna LDXX-6565DS-A2M in format \*.pafx or \*.xml | 1 |  |
|  | Antenna Dual-band: Andrew: HBXX-6516DS-VTM:  (1710-2180/1710-2180MHz, 17.7-18dBi, 65 deg, +/-45, 0-10RET, With bracket, 4\*7/16 Din Female) | 30 |  |
|  | Patterns for antenna HBXX-6516DS-VTM in format \*.pafx or \*.xml | 1 |   |
|   | **Запасное оборудование ЗИП 2G/3G оборудования базовой станции:** |
|  | Suction-Celling Omnidirectional Antenna, Frequency Range:824-960/1710-2170MHz,Gain:2.5dBi | 30 |  |
|  | Suction-Wall Directional Antenna Frequency Range:824-896/1710-2170MHz,Gain:7±1dBi | 30 |  |
|  | N type connector plugs for 1/2 cable（pin） | 150 |  |
|  | 2-Way Splitter 800-2500 with 3.5 db | 30 |  |
|   | **Оборудование QCell БС 3G/4G indoor покрытия:** |
| **Требования к оборудованию BBU (внутренние блоки), которое должно быть поставлено:** |
|  | Внутреннее исполнение (Indoor) |  |  |
|  | Transmission Mode: Transmission over FE/GE electrical/optical ports |  |  |
|  | Port Capacity: 100 Mbit/s and 1000 Mbit/s |  |  |
|  | G/U/L single mode and GUL-mode |  |  |
|  | CPRI Interfaces for 3G: minimum 6 pairs and support UL mode |  |  |
|  | CPRI Interfaces for 2G: minimum 6 pairs and support GL mode |  |  |
| **Требования к оборудованию PBridge и PicoRRU:** |
|  | ZXSDR R8108 F1821(UL/Internal Antenna) support LTE1800/LTE2100 and UMTS2100; support Power over Ethernet |  |  |
|  | PB1000 support optical(10Gbps) and electrical FE/GE ports for propagate power to pRRU; support 220V in  |  |  |
|  | 10G SFP Transceivers |  |  |
|  | **Расширения для ZXUN iCX(MSCS):** |
| 1 | General Processing Blade B1e | 4 |  |
| 2 | RN2QT | 4 |  |
| 3 | E4140 Subrack | 1 |  |
| 4 | Switching Board B1 | 2 |  |
| 5 | Switching Interface 2 | 2 |  |
| 6 | General Processing Blade X2e | 2 |  |
| 7 | RN2QT, PCS | 2 |  |
| 8 | HA without DiskArray, KIT | 1 |  |
| 9 | Hard Disk-H1:300GB(6G SAS,10K,2.5") | 4 |  |
| 10 | PC Server: (DC/No HDD)2CPU 2.4GHz(or above) 8C/Memory:16GB/4 ports/, KIT | 2 |  |
| 11 | X.25 card | 2 |  |
| 12 | Modem cable for S90、S91&S94 | 4 |  |
| 13 | E1 Convertor, SET | 2 |  |
| **Требования к расширению ZXUN iCX(MSCS), которое должно быть поставлено:** |
| 1 | Поставшик обеспечивает проведение настройку и конфигурацию всех расширений оборудования и лицензий по заказу |  |  |
| 2 | Должен быть установлен и настроен функционал LIG на ZXUN iCX(MSCS) |  |  |
|  | **Расширения для MGW ZTE** |
| 1 | Media Resource Board | 4 |  |
|  | **Запасные части для оборудования iVAS** |
| 1 | REAR OF SERVICE MAINTANCE PROCESSING - RSMP (PCS) | 1 |  |
| 2 | Rear of Media Switch Unit- RMSU3 (PCS) | 1 |  |
| 3 | MEDIA RESOURCES UNIT(AUDIO) -MRU | 1 |  |
| 4 | 4G Memory(BA) (PCS) | 10 |  |
| 5 | Add-in Card RFC/2 (PCS) | 2 |  |
| 6 | Add-in Card RSB12 (PCS) | 2 |  |
| 7 | BA22\_2P4C16G Blade Server(No add-in board) (PCS) | 2 |  |
|  | **Запасные части для ZXUN uMAC:** |
| 1 | Packet&Policing Processing Blade B0(PPBB0) | 1 |  |
| 2 | Universal IP Process Board(MPIE2) | 1 |  |
|  | **Запасные части для ZXUN xGW spare HW:** |
| 1 | GSU Class 2(GSU-2) | 1 |  |
| 2 | PFUE2 Class 2(PFU-2) | 1 |  |
|  | **Запасные части для ZXUN USPP:** |
| 1 | Data Processing Blade B0(DPBB0) | 2 |  |
|  | **Запасные части для ZXUN iCX(MSCS):** |
| 1 | General Processing Blade A0(GPBA0) | 2 |  |
|  | **Итого, общая стоимость оборудования:** |  |  |
| **ПРОГРАММНОЕ ОБЕСПЕЧЕНИЕ** |
|   | **Наименование товара** | **Кол-во**  | **Note** |
|
| **LTE Carrier Aggregation SW:** |
|  | Carrier Aggregation(Inter-Band) (eNodeB) | 111 |  |
|  | 10MHz+10MHz (Cell) | 333 |  |
|  | CA Basic Function (Cell) | 333 |  |
| **ПО для расширения 3G оборудования до 6 секторов на базовой станции**: |
|  | UTRAN Basic SW Package (CE) | 8640,0 |  |
|  | Hierarchical Cell Structures (SET) | 8640,0 |  |
|  | Iu Flex (SET) | 8640,0 |  |
|  | Video Telephony Fallback to Speech (AMR) (SET) | 8640,0 |  |
|  | AMR Rate Controlling (SET) | 8640,0 |  |
|  | Cell Broadcast Service (SET) | 8640,0 |  |
|  | RAB Negotiation & Re-negotiation (CE) | 8640,0 |  |
|  | IP over Electric GE (NodeB) (SET) | 45,0 |  |
|  | IP over Electric FE (NodeB) (SET) | 45,0 |  |
|  | IP over Optical GE (NodeB) (SET) | 45,0 |  |
|  | WB-AMR Speech Support (SET) | 8640,0 |  |
|  | IP/ATM Hybrid Transmission (NodeB) | 45,0 |  |
|  | IP Introduce Package (NodeB) | 45,0 |  |
|  | Optional Synchronization Sources IEEE 1588 (NodeB) | 45,0 |  |
|  | HSUPA Introduction Package (Cell)  | 270,0 |  |
|  | HSDPA 3.6Mbps->7.2Mbps Peak Bit Rate (Cell) | 270,0 |  |
|  | HSDPA 7.2Mbps->14.4Mbps Peak Bit Rate (Cell) | 270,0 |  |
|  | HSDPA Introduced Package (Cell) | 270,0 |  |
|  | 64QAM for HSDPA (Cell) | 270,0 |  |
|  | Improved DL L2 Support (Cell) | 270,0 |  |
|  | DC-HSDPA (Cell) | 270,0 |  |
|  | HSDPA 16Users-> 32 Users per cell (Cell) | 270,0 |  |
|  | HSUPA 2ms TTI & 5.76Mbps Peak Bit Rate (Cell) | 270,0 |  |
|  | HSUPA 16 Users->32 Users per cell (Cell) | 270,0 |  |
|  | UMTS Multi-Carrier License (SET) | 135,0 |  |
|  | CE License (KIT) | 8640,0 |  |
|  | Power License(20W) (SET) | 135,0 |  |
|  | OMCR Basic SW Package (Cell) | 270,0 |  |
|  | High Availability (Cell); | 270,0 |  |
| **ПО для расширения 4G оборудования до 6 секторов на базовой станции**: |
|  | LTE FDD Power License(20W) (Set) | 135,0 |  |
|  | LTE FDD UL Throughput License (Mbps) | 1125,0 |  |
|  | LTE FDD DL Throughput License (Mbps) | 3375,0 |  |
|  | LTE FDD RRC\_Connected User License (sUB) | 1900,0 |  |
|  | Dual-mode License (Pcs) | 135,0 |  |
|  | LTE FDD 10M License (Cell) | 135,0 |  |
|  | Basic Feature Package for LTE (Cell) | 135,0 |  |
|  | CSFB to GERAN (Sector) | 135,0 |  |
|  | Support UE Category 4 (Sub) | 1900,0 |  |
|  | IRAT L->U Load Balancing (Sector) | 135,0 |  |
|  | LAI enabled CSFB Enhancement (Sector) | 135,0 |  |
|  | OMC basic software package (Cell) | 135,0 |  |
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| **ПО для расширения 2G/3G/4G оборудования базовой станции:** |
|  | LTE FDD Power License(20W) (Set) | 195,0 |  |
|  | LTE FDD UL Throughput License (Mbps) | 2500,0 |  |
|  | LTE FDD DL Throughput License (Mbps) | 7500,0 |  |
|  | LTE FDD RRC\_Connected User License (Sub) | 5000,0 |  |
|  | Dual-mode License (Pcs) | 195,0 |  |
|  | LTE FDD 10M License (Cell) | 195,0 |  |
|  | LTE FDD 10M License (Cell) | 265,0 |  |
|  | Basic Feature Package for LTE (Cell) | 195,0 |  |
|  | CSFB to GERAN (Sector) | 195,0 |  |
|  | Support UE Category 4 (Sub) | 5000,0 |  |
|  | IP SLA (per eNodeB) | 50,0 |  |
|  | IRAT L->U Load Balancing (Sector) | 195,0 |  |
|  | Transport Resource Dynamical Sharing (per eNodeB) | 50,0 |  |
|  | LAI enabled CSFB Enhancement (Sector) | 195,0 |  |
|  | IEEE1588v2 Frequency Synchronization (eNodeB) | 50,0 |  |
|  | Support UE Category 6 (Sub) | 1000,0 |  |
|  | OMC basic software package (Cell) | 195,0 |  |
|  | GSM/LTE Interworking Package (Cell) | 300,0 |  |
|  | GSM/LTE Cell Reselection (Cell) | 300,0 |  |
|  | Fast Return to E-UTRAN (Cell) | 300,0 |  |
|  | CSFB from LTE to GSM (Cell) | 300,0 |  |
|  | CS Fallback from LTE Support (Cell) | 300,0 |  |
|  | Handover with LTE (Cell) | 300,0 |  |
|  | Fast Return to LTE (Cell) | 300,0 |  |
|  | Cell reselection with LTE (Cell) | 300,0 |  |
|  | Expanded Paging Area (RNC) | 6,0 |  |
|  | Quality Based Handover (CE) | 10000,0 |  |
|  | Independent Threshold for Dynamic AMR HR/FR Conversion (TRX) | 200,0 |  |
|  | Dynamic Half Rate Allocation (TRX) | 4300,0 |  |
|  | Paging Coordination (BSC) | 7,0 |  |
|  | EGPRS on BCCH-TRX Configurable (TRX) | 3100,0 |  |
|  | EGPRS Link Adaptation (TRX) | 3100,0 |  |
|  | Dynamic FR/HR Adjustment (TRX) | 402,0 |  |
|  **ПО 3G/4G для QCell БС indoor покрытия:** |
|  | UTRAN Basic SW Package (CE) | 3840,0 |  |
|  | Hierarchical Cell Structures (SET) | 3840,0 |  |
|  | Iu Flex (SET) | 3840,0 |  |
|  | Video Telephony Fallback to Speech (AMR) (SET) | 3840,0 |  |
|  | AMR Rate Controlling (SET) | 3840,0 |  |
|  | Cell Broadcast Service (SET) | 3840,0 |  |
|  | RAB Negotiation & Re-negotiation (CE) | 3840,0 |  |
|  | IP over Electric GE (NodeB) (SET) | 20,0 |  |
|  | WB-AMR Speech Support (SET) | 3840,0 |  |
|  | IP Introduce Package (NodeB) | 20,0 |  |
|  | Optional Synchronization Sources IEEE 1588 (NodeB) | 20,0 |  |
|  | HSUPA Introduction Package (Cell)  | 120,0 |  |
|  | HSDPA 3.6Mbps->7.2Mbps Peak Bit Rate (Cell) | 120,0 |  |
|  | HSDPA 7.2Mbps->14.4Mbps Peak Bit Rate (Cell) | 120,0 |  |
|  | HSDPA Introduced Package (Cell) | 120,0 |  |
|  | 64QAM for HSDPA (Cell) | 120,0 |  |
|  | Improved DL L2 Support (Cell) | 120,0 |  |
|  | HSDPA 16Users-> 32 Users per cell (Cell) | 120,0 |  |
|  | HSDPA 32 Users -> 64 Users per cell (Cell) | 120,0 |  |
|  | HSUPA 2ms TTI & 5.76Mbps Peak Bit Rate (Cell) | 120,0 |  |
|  | HSUPA 16 Users->32 Users per cell (Cell) | 120,0 |  |
|  | HSUPA 32 Users->64 Users per cell (Cell) | 120,0 |  |
|  | CE License (KIT) | 3840,0 |  |
|  | OMCR Basic SW Package (Cell) | 120,0 |  |
|  | MRR (Cell) | 120,0 |  |
|  | Call Detail Trace (UTRAN) (Cell) | 120,0 |  |
|  | Measurement Report (UTRAN) (Cell) | 120,0 |  |
|  | High Availability (Cell) | 120,0 |  |
|  | CS Fallback from LTE Support (Cell) | 120,0 |  |
|  | Handover with LTE (Cell) | 120,0 |  |
|  | Fast Return to LTE (Cell) | 120,0 |  |
|  | Cell reselection with LTE (Cell) | 120,0 |  |
|  | LTE FDD UL Throughput License (Mbps) | 400,0 |  |
|  | LTE FDD DL Throughput License (Mbps) | 800,0 |  |
|  | LTE FDD RRC\_Connected User License (Sub) | 2000,0 |  |
|  | IP SLA (per eNodeB) | 20,0 |  |
|  | IRAT L->U Load Balancing (Sector) | 120,0 |  |
|  | Transport Resource Dynamical Sharing (per eNodeB) | 20,0 |  |
|  | LAI enabled CSFB Enhancement (Sector) | 120,0 |  |
|  | IEEE1588v2 Frequency Synchronization (per eNodeB) | 20,0 |  |
|  | OMC basic software package (Cell) | 120,0 |  |
|  | pRRU dual-mode license(U upgrade to UL) (Set) | 120,0 |  |
|  | UMTS Qcell cell merge license (Cell) | 40,0 |  |
|  | FDD LTE Qcell cell merge license (Set) | 40,0 |  |
|   |   |   |   |
| **Расширение ПО для MGW:** |
| 1 |  TC Capacity (license) | 3600 |  |
| 2 |  RTP Capacity(license) | 4500 |  |
| **Расширение ПО для HSS:** |
| 1 | ZXUN USPP EPC HSS FeatureHSS Static users basic software(per/ksub) | 200 |  |
| 2 | ZXUN USPP EPC HSSHSS dynamic users basic software(per/ksub) | 200 |  |
| 3 | ZXUN USPP EPC HSSAuthentication information storage(per/ksub) | 200 |  |
| 4 | ZXUN USPP EPC HSSSubscription information storage(per/ksub) | 200 |  |
| 5 | ZXUN USPP EPC HSS s6a/S6d interface(per/ksub) | 200 |  |
| 6 | ZXUN USPP EPC HSS Operation & Maintenance basic software(per/ksub) | 200 |  |
| 7 | ZXUN USPP EPC HSS Import/export tool(per/ksub) | 200 |  |
| 8 | ZXUN USPP EPC HSS Supports IPV4 & IPV6(per/ksub) | 200 |  |
| 9 | ZXUN USPP EPC HSS Overload protection(per/ksub) | 200 |  |
| **Расширение ZXUN iCX(MSCS)::** |
| 1 | VMSC 2G Basic Software, sub | 336 |  |
| 2 | VMSC Basic Software, sub | 4 096 |  |
| 3 | OMM Basic Software, set | 1 |  |
| 4 | VMSC VLR Basic Software, ksub | 4.1 |  |
| 5 | Load Control Software, set | 1 |  |
| 6 | CS Billing Format Adaptation and Integration, set | 1 |  |
| 7 | ZTE NewStart CGSL V4, KIT | 2 |  |
| 8 | OS:Windows Server 2008 Standard/64bit/5CAL/English, KIT | 2 |  |
|  | **Итого, общая стоимость ПО:** |  |  |

**Примечание. В случае предоставления всей документации на английском языке, к ним дополнительно должны прилагаться идентичный по смыслу перевод на русском языке.**