SYSTEM SALES CONTRACT

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List of Schedules

The following Schedules are incorporated into this Contract:

Schedule A	**City of Roseville Terms and Conditions**
Attachment A	Insurance Requirements
Schedule B	**Statement of Work**
Schedule C	**Point by Point Compliance**
Schedule D	**Solution Architecture**
Schedule E	**Delivery / Payment Schedule**
Schedule E-1	**May 22, 2017 Cost Proposal**
Schedule F	**Acceptance Test(s)**
Schedule G	**Change Order**
Schedule H	**Labor and Materials Payment Bond**

This agreement (the "Contract" or the "Agreement") is entered into, by and between City of Roseville, a municipal corporation having a place of business at 316 Vernon Street, Roseville, California, ("Customer") and Zetron, Inc., a corporation having its headquarters at 12034 134th Ct. NE, Redmond, Washington 98052 USA ("Zetron") for the provision of the Work to Customer.

Whereas Customer has requested and Zetron agrees to provide the Work to Customer described in this Contract in accordance with the terms of this Contract;

In consideration of the mutual promises contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Customer and Zetron hereby agree as follows:

1) Definitions

In this Contract, the following terms shall have the meaning as described below:

"Acceptance Test(s)" means the Acceptance Test(s) as described in Clause 12 (b) of this Contract.

"Affiliate" means, with respect to any entity, any other entity controlling, controlled by or under common control with such entity.

"Bug Fix" means a revision to software/firmware in the event that an error is found that prevents the Zetron Communications System from permanently functioning as stated in Zetron's system specifications. Bug fixes do not include any additional functionality or upgrades unless otherwise determined by Zetron in its sole discretion.

"Change Order" means a change to this Contract that is requested by one party, and approved by both parties through a change order form as described in Schedule G.

"Contract" means this agreement between Customer and Zetron that includes all amendments and schedules hereto.

"Contract Price" means the final price quoted to Customer for Zetron to perform the Work and deliver the Zetron Communications System as described in this Contract. As of the effective date of this Contract, the Contract Price is described in Schedule E.

"Customer Equipment" means the computer and telecommunications equipment owned or leased by Customer that is necessary to provide the Work; provided, however, Customer Equipment shall not include any equipment supplied by Zetron under the Contract. Customer Equipment includes the following: (i) computer equipment and associated attachments, features, accessories, peripheral devices, and other equipment; (ii) telecommunications equipment, including private branch exchanges, multiplexers, modems, hubs, bridges, routers, and other telecommunications equipment; and (iii) related services (e.g., maintenance and support services, upgrades, subscription services) provided by third parties (e.g., vendor, manufacturer, lessor) in the same contract covering the provision of such equipment.

"Dispute" means the process described in Clause 6 of this Contract.

"FAT Certificate" means the signed Certificate of Delivery – (FAT) that constitutes Customer's acceptance of the Zetron Communications System for shipment.

"Provisional Acceptance" means the Factory Acceptance Test ("FAT") or Site Acceptance Test ("SAT") has been completed but minor deliverables must be completed by Zetron, which do not materially affect the operation of the Zetron Communications System.

"SAT Certificate" means the signed Certificate of Delivery – (SAT) that constitutes final acceptance and beneficial use of the Zetron Communications System by Customer. Customer's signing of this document triggers the last payment milestone. The Warranty Period starts on the date the SAT is completed.

"Successive Warranty Period" means any warranty period purchased by Customer that is beyond the initial Warranty Period.

"Term" shall mean the term of this Contract which shall begin on the date first listed above and end at the end of the initial Warranty Period unless otherwise terminated according to the terms of this Contract.

"Third Party Software" means any software owned or licensed by a third party that is included with the Zetron Communications System and that is provided under license by a third party.

"Warranty Period" means the initial one (1) year period following completion of the SAT.

"Work" means all required articles, materials, supplies, goods, and services to be supplied by Zetron under this Contract.

"Zetron Business Hours" means Zetron's normal working hours of 6:00 A.M. to 5:00 P.M. Pacific Time, Monday – Friday, excluding Zetron recognized holidays.

"Zetron Communications System" means the Zetron communication system(s) as described in Schedule B.

"Zetron Software" means the Zetron proprietary software for the Zetron Communications System.

2) Applicable Laws

(a) This Contract shall be governed by the laws of the State of California, without regard to its conflicts of law principles.

(b) Both parties agree to comply with all applicable laws, orders, rules, regulations, and ordinances of the United States and, if applicable, the country where Zetron will be performing the Contract. The provisions of the United Nations Convention on Contracts for the International Sale of Goods shall not apply to this Contract.

3) Assignment and Subcontracting

Except for delegating certain duties by Zetron to one or more of Zetron's qualified Affiliates or qualified subcontractors in the normal course of Zetron's business and except for an assignment by either party to a successor in interest resulting from a merger, consolidation, reorganization or sale of all or substantially all of the party's assets or stock related to such party's performance under this Contract, any assignment of either party's Contract rights or delegation of duties shall be void, unless prior written consent is given by the other party. Any permitted assignee of this Contract must agree in writing to be bound by all the terms of this Contract.

4) Changes and Work Outside Scope

(a) Either party may request a Change Order to this Contract. Change Orders include, but are not limited to, changes to deliverables, pricing, equipment, project schedule, scope of work, and service options. Written approval by authorized representatives of both parties is required for a Change Order to take effect. Such Change Orders shall be incorporated into this Contract.

(b) If any Change Order causes an increase or decrease in the cost of, or the time required for, performance of any part of this Contract, Customer and Zetron shall mutually agree to an adjustment in the Contract Price or delivery schedule or both. Changes to the delivery schedule may be subject to a price adjustment.

(c) Failure to agree to any adjustment shall be resolved in accordance with the Disputes clause of this Contract.

(d) If Zetron provides additional work outside the scope of the Contract, Customer will be charged at Zetron's then-current time and materials rate.

5) Default

Customer or Zetron, by written notice, may terminate this Contract for default, in whole or in part, if the other party fails to comply with any of the material terms of this Contract. The breaching party shall have thirty (30) days (or a longer period, if authorized in writing) to cure any such failure after receipt of notice from the other party, except in the case of any nonpayment, the cure period will be five (5) days.

6) Disputes

(a) Any dispute, controversy, or claim arising out of or relating to this Contract or a default, termination, or invalidity hereof, shall first be submitted to an executive officer of each party responsible for this Contract for resolution during the thirty (30) days following notice of such dispute and, if not resolved, shall be settled by arbitration by a single arbitrator under the rules of the American Arbitration Association. The place of the arbitration shall be Roseville, California. The language to be used in the arbitral proceedings shall be English. Judgment of the arbitrator shall be final and nonappealable and may be entered in any court having jurisdiction, or application may be made to such court for a judicial acceptance of the award and an order of the enforcement. Except as otherwise provided in this Contract, each party shall bear its own expenses of the arbitration, but the fees and costs of the arbitrator shall be borne equally between the parties participating in the arbitration and the arbitrator shall award attorneys' fees to the party that prevails in the dispute.

(b) Consistent with the expedited nature of arbitration, each party will, upon the written request of the other party, promptly provide the requesting party with copies of documents relevant to the issues raised by any claim or counterclaim. Any dispute regarding discovery, or the relevance or scope thereof, shall be determined by the arbitrator, whose determination shall be conclusive. All discovery shall be completed within thirty (30) days following the appointment of the arbitrator.

(c) Except for any claims by Zetron for nonpayment, neither party may bring any action or claim, regardless of form, arising out of this Contract more than four years after the cause of action accrues regardless of whether such party knew or should have known of the accrual of any such cause of action.

(d) Notwithstanding the foregoing, in the event of a breach or threatened breach under the Confidential Information or Intellectual Property provisions of this Contract, either party may forego arbitration under this provision and seek immediate judicial and equitable remedies, including, but not limited to, injunctive relief or specific performance.

7) Excusable Delay

(a) Zetron shall be excused from, and shall not be liable for, failure of performance due to one or more of the following qualifying events:

(i) War; warlike operation; insurrection; terrorism; riot; fire, flood, explosion, accident, governmental act; material control regulations or orders; acts of God; act of the public enemy; utility failure; epidemic; quarantine restriction; strikes, and any other acts beyond Zetron's reasonable control;

(ii) The Contract will be extended for that period of time attributable to such event.

8) Export Control

(a) Zetron and Customer agree to comply fully with all applicable U.S. or other government export control laws and regulations as they may apply to any hardware, software, information, technical data or the direct product of such information, furnished to the other party under this Contract. Zetron and Customer agree that they will not permit the re-export of any of the above items including to foreign nationals employed by, associated with, or under contract to them or their lower-tier suppliers without the authority of any required export license or applicable license exception.

(b) Zetron and Customer shall immediately notify the other party if they are listed in any denied parties list or if their export privileges are otherwise denied, suspended, or revoked in whole or in part by any U.S. governmental entity or any other governmental entity or agency.

9) Indemnification

(a) Subject to the terms of this Contract, Zetron shall indemnify Customer, its officers, employees and agents against all liability that may result from all claims, actions, suits, or damages finally awarded including without limitation reasonable attorneys' fees, related to injury or death of any person or damage to or loss of any property caused by Zetron's gross negligence or willful misconduct in the course of performance of this Contract.

(b) Subject to the terms of this Contract, Customer shall indemnify Zetron, its officers, employees and agents against all liability that may result from all claims, actions, suits, or damages finally awarded including without limitation reasonable attorneys' fees, related to injury or death of any person or damage to or loss of any property caused by Customer's gross negligence or willful misconduct in the course of performance of this Contract.

10) Independent Contractors

Zetron is an independent contractor in all its operations and activities hereunder.

11) Confidential Information

Confidential or proprietary information provided by the disclosing party to the receiving party remains the property of the disclosing party. The receiving party agrees to comply with the terms of any confidential disclosure agreement with the disclosing party and to comply with all proprietary information markings and restrictive legends applied by the disclosing party to anything provided hereunder to the receiving party. The receiving party agrees not to use any such information provided by the disclosing party for any purpose except to perform this Contract and agrees not to disclose such information to any third parties, except for Affiliates that need to know such information related to this Contract, without the prior written consent of the disclosing party.

12) Inspection and Acceptance

(a) Customer may inspect all Work at reasonable times and places, including, when practicable, during manufacture and before shipment provided Customer must reasonably arrange in advance with Zetron for such inspection.

No such inspection shall relieve Zetron of its obligations to furnish all Work in accordance with the requirements of this Contract. Customer's final inspection and acceptance shall be at Customer's facilities as described in Schedule F unless otherwise specified in this Contract.

(b) The procedures for the FAT and SAT are as described in Schedule F. For Acceptance Tests, Customer and Zetron shall each make any preparations and supply any Zetron-required items. Customer must send any Customer-supplied equipment in its entirety, unless otherwise mutually agreed, to Zetron's facility at Customer's expense to enable Zetron to integrate said equipment into the Zetron Communications System. In the event Customer has not supplied any Customer-required materials or Customer Equipment, or completed any facility installation requirements listed in the Statement of Work or the Acceptance Test(s), or made themselves available for any Acceptance Test(s) that require their participation, completion of the Acceptance Test(s) shall be extended by the number of days required for completion of such requirements. The Acceptance Tests shall be performed by Zetron and are designed to evaluate that the Zetron Communications System performs and is manufactured in accordance with this Contract and Zetron's specifications. If the Zetron Communications System does not meet all such requirements, Zetron shall, at Zetron's expense, have up to thirty (30) days to make such changes or modifications to meet such requirements. Customer shall not unreasonably withhold or delay acceptance of the FAT or SAT criteria or the FAT or SAT. In the event that any of the Acceptance Tests identify area(s) of nonconforming performance that do not materially affect the operation of the Zetron Communications System, Customer shall agree to Provisional Acceptance and Zetron shall promptly remedy such nonconformance on a mutually agreed schedule. For the FAT, Zetron shall remedy the nonconformance before the SAT is conducted. Only the nonconforming component(s) of any of the Acceptance Tests shall be retested. Customer may, but is not required to, observe the FAT but Customer must observe the SAT. Sample FAT and SAT certificates are attached to Schedule F. The signed FAT and SAT Certificates will be made a part of this Contract.

13) Insurance or Entry on Customer's Property

Zetron shall procure and maintain insurance as prescribed in Attachment A to Schedule A, attached hereto and incorporated herein by reference.

14) Payment Bond

Within fourteen (14) days of execution of this Contract, Zetron shall furnish to the City a Labor and Materials Payment Bond as provided in Schedule H. The Labor and Materials Payment Bond shall apply only to installation of dispatch consoles as identified in Zetron's cost proposal. The City shall release such Labor and Materials Payment Bond at the completion of such installation.

15) Intellectual Property

(a) Unless otherwise agreed by Customer and Zetron in writing, Customer agrees and understands that Zetron shall be the owner of all intellectual property rights in all deliverables related to this Contract and all inventions, technology, designs, works of authorship, mask works, technical information, Zetron Software, Work, business information, and other information conceived, developed, or otherwise generated in the performance of this Contract by or on behalf of Zetron. Customer hereby assigns and agrees to assign all right, title, and interest in the foregoing to Zetron, including (without limitation) all copyrights, patent rights, and other intellectual property rights therein and further agrees to execute, at Zetron's request and expense, all documentation reasonably necessary to perfect title therein in Zetron and that all such subject matter will be deemed confidential or proprietary information of Zetron and subject to the protection provisions of the clause entitled *Confidential Information*.

(b) Any Zetron Software provided under this Contract is licensed, not sold, to Customer under the terms of Zetron's then-current standard license agreement for such Zetron Software, a copy of which is included with the Zetron Software or included as part of the installation of the Zetron Software, and incorporated into this Contract. Any Third Party Software shall be subject to the license agreements of such Third Party Software vendors. Upon request by Customer, Zetron shall provide all documentation supporting such licensing rights, including copies of licenses granted by Zetron's suppliers to Zetron.

(c) Zetron warrants that the Work supplied or performed by Zetron and delivered under this Contract will not infringe or otherwise violate the U.S.-based intellectual property rights of any third party. Zetron agrees to defend, indemnify, and hold harmless Customer and its customers from and against any claims, damages, losses, costs, and expenses finally awarded, including reasonable attorneys' fees, based on a claim that the Work performed or delivered under this Contract infringes or otherwise violates the U.S.-based intellectual property rights of any person or entity.

(d) Zetron represents, warrants and covenants that it is either the owner of, or authorized to use, all of the Zetron Software and/or any Third Party Software that is used or to be used in connection with the Work it will supply in accordance with this Contract.

16) Language and Standards

All reports, correspondence, drawings, notices, markings, and other communications shall be in the English language. The English version of the Contract shall prevail. Unless otherwise provided in writing, all documentation and Work shall use the units of U.S. standard weights and measures.

17) Packing and Shipment

All Work is to be packed in accordance with good commercial practice to prevent damage during shipping. For all Work to be supplied by Zetron, unless otherwise specified, delivery shall be EX Works Zetron's facility. All references to delivery and/or scheduled delivery, schedules and similar terms in the Contract shall mean the date Zetron ships the Zetron equipment to Customer.

18) Payments, Taxes, Duties, and Contract Price

(a) Where applicable, invoices shall be based on completion of milestone dates in Schedule E, Delivery / Payment Schedule. Unless otherwise agreed, terms of payment shall be net thirty (30) days from date of Zetron's invoice. Credit card payments are not permitted under this Contract unless otherwise agreed by Zetron in writing.

(b) Unless otherwise stated, the Contract Price stated in the Contract is firm and fixed in U.S. dollars and is payable in U.S. dollars. Prices do not include any applicable federal, state, provincial, national, and local taxes, or duties, tariffs, and similar fees imposed by any government, all of which shall be paid by Customer. Prices shall not include any taxes, impositions, charges, or exactions for which Customer has furnished a valid exemption certificate or other evidence of exemption.

19) Precedence

In the event of a conflict between this Contract and the Schedules to this Contract, the Schedules shall control, except in the event of a conflict between Clause No. 25, Limitation of Liability, of this Contract and any provisions in any Schedules to this Contract, Clause No. 25 shall control. In the event of a conflict among the Schedules, the Schedules shall control in the order listed.

20) Survivability

If this Contract is terminated, neither Zetron nor Customer shall be relieved of those obligations contained in this Contract for the following provisions:

- Applicable Laws, Clause No. 2
- Disputes, Clause No. 6
- Export Control, Clause No. 8
- Indemnification, Clause No. 9
- Confidential Information, Clause No. 11
- Intellectual Property, Clause No. 15
- Warranty, Clause No. 22
- Limitation of Liability, Clause No. 25

21) Waiver, Approval, and Remedies

Failure by either party to enforce any of the provisions of this Contract shall not be construed as a waiver of the requirements of such provisions, or as a waiver of the right of such party thereafter

to enforce each and every such provision. The rights and remedies of the parties in this Contract are cumulative and in addition to any other rights and remedies provided by law or in equity unless otherwise stated in this Contract.

22) Warranty

Customer assumes responsibility for the selection of the Zetron Communications System and Work to achieve Customer's or its end user's intended results and for the results obtained from the Zetron Communications System and Work. If Customer has provided Zetron with any requirements, specifications or drawings, or if Zetron provides Customer with such materials, such materials are provided solely for Customer's convenience and shall not be binding on Zetron unless agreed contractually by Zetron. UNLESS AGREED CONTRACTUALLY BY ZETRON, ZETRON DOES NOT WARRANT THAT THE ZETRON COMMUNICATIONS SYSTEM OR WORK WILL MEET CUSTOMER'S OR ITS END USER'S REQUIREMENTS OR SPECIFICATIONS OR THAT OPERATION OF THE ZETRON COMMUNICATIONS SYSTEM WILL BE UNINTERRUPTED OR ERROR FREE. During the Warranty Period, and SUBJECT TO THE LIMITATIONS SET FORTH BELOW, Zetron warrants that the Zetron Communications System and Work furnished pursuant to this Contract shall conform to Zetron's specifications and all applicable requirements of this Contract and will be free from material defects in material and workmanship. For Customer's convenience, Zetron may purchase and supply additional items manufactured by others. In these cases, although Zetron's warranty does not apply, Customer shall be the beneficiary of any applicable third party manufacturers' warranties, subject to the limitations therein. Zetron's warranty covers parts and Zetron factory labor. Customer must provide written notice to Zetron within the Warranty Period of any defect. If the defect is not the result of improper or excessive use, or improper service, maintenance or installation by Customer or its agents, and if the Zetron Communications System has not been otherwise damaged or modified by Customer or its agents, Zetron shall, AS ZETRON'S SOLE AND EXCLUSIVE LIABILITY AND CUSTOMER'S SOLE AND EXCLUSIVE REMEDY, either repair or replace the defective items, reperform the Work or refund the purchase price for the defective item(s), at Zetron's option, after return of such items by Customer to Zetron. Transportation of replacement defective items and return of nonconforming defective items shall be at Zetron's expense. No credit shall be allowed for work performed by Customer. Any non-defective items shall be returned at Customer's expense, and testing and handling expenses shall be borne by Customer. For any repaired or replaced items of the Zetron Communications System, the Warranty Period shall be for the longer of the original Warranty Period or thirty (30) days following such repair or replacement. If the original warranty runs out prior to the purchase of any successive warranty, Customer shall pay all amounts that would have been due had Customer kept the items under warranty during such entire period. Out-of-warranty repairs will be invoiced at the then-current Zetron hourly rate plus the cost of needed components. THE FOREGOING WARRANTY AND THE THIRD PARTY MANUFACTURERS' WARRANTIES, IF ANY, ARE IN LIEU OF ANY AND ALL OTHER WARRANTIES EXPRESSED, IMPLIED OR ARISING UNDER LAW, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, FITNESS FOR A PARTICULAR PURPOSE, AND THOSE ARISING FROM COURSE OF PERFORMANCE OR COURSE OF DEALING.

Zetron's warranty does not include technical telephone support. Such support is available only through the purchase of a Zetron maintenance service plan that includes this support.

23) Notices

Any notice required to be given hereunder shall be either served personally or sent via facsimile or certified mail, return receipt requested, to the parties at their respective address or fax number set forth below or as amended by proper notice. Any notice by facsimile shall be deemed to have been sufficiently given on the day of dispatch if sent during the receiving party's normal business hours or the day after if sent after hours, provided a successful transmission report has been produced. A copy of the notice may be sent via e-mail but the original must be sent as described above.

CUSTOMER	ZETRON
City of Roseville 316 Vernon Street, Suite 300 Roseville, CA 95678	Zetron, Inc. P.O. Box 97004 Redmond, WA 98073-9704
Attention: Karl Grover, Project Manager	Attention: Brent Dippie, Pres./C.E.O.
Phone: 916-774-5145 Facsimile: E: mail: kgrover@roseville.ca.us	Phone: 425-820-6363 Facsimile: 425-823-0861 E: mail: bdippie@zetron.com

24) Entire Agreement; Counterparts; Electronic and Facsimile Delivery

(a) The Contract, including any schedules and exhibits, constitutes the entire agreement between the parties with respect to the subject matter described in this Contract and supersedes all prior or contemporaneous agreements, whether written or oral, with respect to the subject matter contained in this Contract. Any additional or differing terms or conditions which may be proposed by Zetron or Customer or included in any other documents, including but not limited to purchase orders, not included in this Contract shall have no effect unless accepted in writing by Customer and Zetron.

(b) This Contract may be executed in two or more counterparts, all of which when taken together shall constitute one and the same agreement and in the event that any signature is delivered by facsimile or electronic transmission, such signature shall create a valid and binding obligation of that party with the same force and effect as delivery of original signatures.

25) Limitation of Liability

EXCEPT FOR ANY AMOUNTS DUE TO ZETRON UNDER THIS AGREEMENT, IN NO EVENT SHALL EITHER PARTY'S LIABILITY INCLUDE CONSEQUENTIAL, INDIRECT, SPECIAL, OR INCIDENTAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND EVEN IF THE LIMITED REMEDIES IN THIS CONTRACT FAIL OF THEIR ESSENTIAL PURPOSE. NEITHER PARTY'S LIABILITY SHALL IN ANY EVENT EXCEED ONE MILLION DOLLARS ($1,000,000.00)

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this Agreement in duplicate by its City Manager and attested to by its City Clerk under the authority of Resolution No. _____, adopted by the Council of the City of Roseville on the ___ day of _____, 20__, and Zetron has caused this Agreement to be executed.

CITY OF ROSEVILLE, a
municipal corporation

BY: _____
ROB JENSEN
City Manager

ATTEST:

BY: _____
SONIA OROZCO
City Clerk

APPROVED AS TO FORM:

BY: _____
ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUBSTANCE:

BY: _____
HONG SAE
Chief Information Officer

ZETRON, INC., a Washington corporation

_____

BY: _____
its: PRESIDENT & CEO

and

BY: _____
its: _____

SCHEDULE A

CITY OF ROSEVILLE TERMS AND CONDITIONS

1. To the fullest extent allowed by law, Contractor shall defend, indemnify, and save and hold harmless the City, its officers, agents, employees and volunteers from any claims, suits or actions of every name, kind and description brought forth, or on account of, injuries to or death of any person (including but not limited to workers and the public), or damage to property, resulting from or arising out of Contractor's willful misconduct or negligent act or omission while engaged in the performance of obligations or exercise of rights created by this Agreement, except those matters arising from City's sole or active negligence or willful misconduct. The parties intend that this provision shall be broadly construed. Contractor's responsibility for such defense and indemnity obligations shall survive the termination or completion of this Agreement for the full period of time allowed by law. The defense and indemnity obligations of this Agreement are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained in this Agreement.
2. Contractor is an independent contractor, and shall not be considered an officer, agent or employee of the City.
3. Without the written consent of the City, this Agreement is not assignable by Contractor either in whole or in part.
4. Time is of the essence of this Agreement.
5. At any time during the term of this Agreement, the City has the right to terminate this Agreement provided Contractor is given a thirty (30) day notice. Upon termination, the City shall pay to Contractor the dollar amount equal to the percentage of Work performed by Contractor as of the termination date multiplied by the Contract Price minus any amounts previously paid by the City under the Contract, plus reasonable additional expenses incurred by Contractor related to the termination and submitted to the City with adequate documentation.
6. This Agreement may only be amended or modified in writing. It is integrated and contains the complete understanding of the parties.
7. All equipment, supplies and services sold to the City of Roseville shall conform to the general safety orders of the State of California.
8. Unless notified to the contrary, in writing, the City assumes that the Contractor has accepted the work in accordance with the plans and specifications (if any) and agrees to do the work in compliance with this Agreement.
9. All prevailing wages and fair employment practices must be adhered to. For prevailing wage contracts over $25,000, copies of certified payroll must be submitted with invoices. Prevailing wage rates may be obtained from the State Department of Industrial Relations and/or the following website address: http://www.dir.ca.gov/dlsr/DPreWageDetermination.htm.

10a. Unless otherwise specified, the Contractor shall maintain the policies of insurance outlined in Attachment A, incorporated herein by this reference, in full force and effect during the term of this Agreement. The City of Roseville retains sole discretion in determining the types and proper levels of insurance coverage.

10b. Form. Contractor shall submit a certificate evidencing such coverage for the period covered by this Agreement in a form satisfactory to Risk Management and the City Attorney, prior to undertaking any work hereunder. Any insurance written on a claims made basis is subject to the approval of Risk Management and the City Attorney.

10c. Additional Insureds. Contractor shall also provide a separate endorsement or section of the policy showing City, its officers, agents, employees, and volunteers as additional insureds for each type of coverage (except Workers' Compensation) and for ongoing and completed operations. Such insurance shall specifically cover the contractual liability of Contractor. The additional insured coverage under the Contractor's policy shall be primary and noncontributory, as evidenced by a separate endorsement or section of the policy, and shall not seek contribution from City's insurance or self-insurance. In addition, the additional insured coverage shall be at least as broad as the Insurance Services Office ("ISO") CG 20 01 Endorsement. Any available insurance proceeds in excess of the specified minimum insurance coverage requirements and limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be: (1) the minimum coverage and limits specified in this Agreement; or (2) the full coverage and maximum limits of any insurance proceeds available to the named insureds, whichever is greater.

10d. Cancellation/Modification. Contractor shall provide ten (10) days written notice to City prior to cancellation or modification of any insurance required by this Agreement.

10e. Umbrella/Excess Insurance. The limits of insurance required in this Agreement may be satisfied by a combination of primary and excess insurance. Any excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and noncontributory basis for the benefit of City (if agreed to in a written contract) before City's own insurance shall be called upon to protect it as a named insured.

10f. Subcontractors. Contractor agrees to include in its contracts with all subcontractors the same requirements and provisions of this Agreement, including the indemnity and insurance requirements, to the extent they apply to the scope of the subcontractor's work. Furthermore, Contractor shall require its subcontractors to agree to be bound to Contractor and City in the same manner and to the same extent as Contractor is bound to City under this Agreement. Additionally, Contractor shall obligate its subcontractors to comply with these same provisions with respect to any tertiary subcontractor, regardless of tier. A copy of City's indemnity and insurance provisions will be furnished to the subcontractor or tertiary subcontractor upon request.

10g. Self-Insured Retentions. All self-insured retentions ("SIR") must be disclosed to Risk Management for approval and shall not reduce the limits of liability. Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or City. City reserves the right to obtain a full certified copy of any insurance policy and endorsements. The failure to exercise this right shall not constitute a waiver of such right.

10h. Waiver of Subrogation. Contractor hereby agrees to waive subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss under a Workers Compensation, Commercial General Liability or Automobile Liability policy. All Workers Compensation, Commercial General Liability and Automobile Liability policies shall be endorsed with a waiver of subrogation in favor of City, its officers, agents, employees and volunteers for all worked performed by Contractor, its employees, agents and subcontractors.

10i. Liability/Remedies. Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve Contractor of liability in excess of such coverage, nor shall it preclude City from taking such other actions as are available to it under any other provisions of this Agreement or law.

11. Contractor shall comply with all federal, state and local laws and ordinances, including but not limited to the City's storm water regulations, as may be applicable to the performance of services under this Agreement. Failure to comply with local ordinances may result in monetary fines and cancellation of this Agreement. Refer to www.roseville.ca.us/stormwater for links to more information on the City's storm water regulations.

12. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a ".pdf" format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile or ".pdf" signature page were an original thereof.

13. If either party commences any legal action against the other party arising out of this Agreement or the performance thereof, the prevailing party in such action shall be entitled to recover its reasonable litigation expenses, including but not limited to, court costs, expert witness fees, discovery expenses, and attorneys' fees. Any action arising out of this Agreement shall be brought in Placer County, California, regardless of where else venue may lie. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

14. This Agreement shall be binding upon the heirs, successors, executors, administrators and assigns of the respective parties hereto.

15. If any of the provisions contained in this Agreement are for any reason held invalid or unenforceable, such holding shall not affect the remaining provisions or the validity and enforceability of the Agreement as a whole.

16. No contractor or subcontractor may work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. During the performance of this agreement, Contractor and its subcontractors shall have a continuing legal obligation to maintain current registration with the Department of Industrial Relations. Contractor is hereby notified that this project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

17. Contractor must submit all claims as defined in and in accordance with the claim resolution process set forth in Section 9204 of the Public Contract Code. Each such claim must be sent to the City by registered mail or certified mail with return receipt requested and must contain reasonable documentation to support the claim. All claims must be received prior to acceptance of the work.

ATTACHMENT A

ATTACHMENT A

HUMAN RESOURCES/RISK MANAGEMENT DIVISION
INSURANCE REQUIREMENTS – SERVICE AGREEMENT
GENERAL

Required Coverage:

• General Liability:	$1,000,000 per occurrence $2,000,000 aggregate Personal Injury: $1,000,000 per occurrence $2,000,000 aggregate
• Automobile Liability:	$1,000,000 combined single limit
• Workers' Compensation:	Statutory

*Policies must be primary and non-contributory except for workers' compensation policy
*Policies must contain a waiver of subrogation
*A 10 day notice of cancellation must be provided
*The Contractor is responsible for all self-insured retentions and deductibles under Contractor's policies.
*All Self Insured Retentions must be listed on the certificate

Required Documentation:

- A certificate(s) of insurance listing the required coverage naming as certificate holder:

  The City of Roseville
  Insurance Compliance
  PO Box 12010-R1
  Hemet, CA 92546-8010

- Additional Insured Endorsement- General Liability policy: CG 20 38 04 13 or an equivalent, blanket endorsement or section of the policy. Endorsement shall cover the City of Roseville, its officers, agents, employees and volunteers as additional insured
- Waiver of Subrogation Endorsements
- Primary and Non-Contributory Coverage Endorsement – CG 20 01 04 13 or an equivalent

All documentation needs to be provided using one of the following methods:

A. By email to roseville@ebix.com
B. By fax to (770) 325-5727

After using one of these methods, please **DO NOT** send the certificate by mail.

SCHEDULE B

STATEMENT OF WORK

ZETRON, INC.

Response to City of Roseville, CA

Response for Proposals

800MHz Radio System Replacement

TAB E: Project Plan

March 2, 2017

ZETRON 12034 134th Ct. NE | Redmond, WA 98052 | (p) 425.820.6363 | (f) 425.820.7031 | www.zetron.com

Table of Contents

Section 1 ..... General Information
Section 2 .....Site Assumptions and Customer Deliverable
Section 3 ..... Zetron Deliverables
Section 4 .....Sample Project Gnatt Schedule and Timeline

1. General Information

This Statement of Work (or "SOW") and its accompanying appendices, if applicable, define the responsibilities of Zetron and its customer listed below during the construction of the Zetron Communications System (the "System") under the applicable system sales or other written agreement between Zetron, Customer, and any other contracting party ("Contract"). Tasks to be performed by others are included in this document for informational purposes.

In all cases, the most recent Statement of Work will be the actual document for the construction of the System.

1.1. Project Identification

Identifying Project Name	City of Roseville, CA
End User	City of Roseville, CA
Customer	City of Roseville, CA
Customer's Address (for correspondence)	tbd
Customer's Project Manager	tbd
Customer's P.O. #	tbd
Contract Name, Contract Number, and Contracting Parties	tbd
Ship to Address	tbd
Change Order Process	Zetron's change order form and process, unless otherwise mutually agreed.

1.2. Reference Documents

Enter any relevant contract / information or other related references, i.e. Purchase Order (P.O.) #, MSP, technical references, installation manual, etc. (as necessary).

1.3. Delivery Schedule

Zetron and its subcontractor(s), if applicable, shall create a delivery schedule that meets the delivery requirements under the Contract. If the Contract did not contain a written delivery schedule, the completed, written delivery schedule shall be incorporated into the Contract.

1.4. Interrelationships

Zetron reserves the right to use subcontracted services. Zetron must have access to the end–user for purposes of development efforts and project progression for the mutual benefit of all parties.

1.5. Equipment

Zetron will manufacture, configure, and test Common Control Equipment (CCE) and Operator Position Equipment (OPE) including the hardware and software identified in this section.

The System shall include interface cards, sub-rack assemblies, cabinets, and cabling to support the following:

The AcomNOVUS console systems proposed for City of Roseville, CA, consists of a single AcomNOVUS core at the City of Roseville Dispatch Center.

The AcomNOVUS Core consists of Media Controller Servers (MCS) and Infrastructure Gateway (IG) servers. The system components are deployed in a redundant configuration to maximize up-time and prevent a single point of failure from compromising operation. This includes servers deployed in pairs to host redundant services and withstand a server or service fault. It also includes a network switch stack with redundant links to each server. The individual AcomNOVUS console positions and various communication gateways are connected to portal services hosted in the Acom Core over IP networks.

Communications to external resources are configured as:

P25 RFSS CSSI voice paths will be made through the redundant Infrastructure Gateway (IG) servers, augmented with the standard CSSI interface feature set.

Conventional radio, and Control station interfaces will be provided through the Acom Radio Gateways (ARGs).

System Configuration

The Zetron proposal includes Acom full feature console positions with advanced dispatcher capabilities. It also includes all AcomNOVUS core equipment needed to interface to external communication resources, as well as management hardware and software to manage and configure the system and console positions (as specified below).

Console Positions

Each of the ten (10) full feature console positions consists of:

- One (1) x PC workstation with one (1) 22" touch-screen monitors for running the ACS console application. (Larger screen sizes are available if required).

- One (1) x Acom Media Dock XS.
- Four (4) x Zetron Acom speakers with individual volume controls (1 x Select and 3 x Unselected).
- Two (2) x Headset jack boxes (dual-prong interface for headset control with dual volume controls).
- One (1) x Footswitch.
- One (1)x Desktop Microphone
- One (1) x Acom Console Software (ACS) application with Pro Console license. This includes the following feature licenses:
    - Base Acom Console License
    - Advanced Radio Control License
    - Tone Signaling / Paging Feature Set License
    - Telephony Feature Set License
    - Call System License
    - Auxiliary I/O License
    - Integrator IRR Client License

AcomNOVUS Core Equipment

The AcomNOVUS Core equipment at the City of Roseville Dispatch Center location consists of:

- Media Controller Servers (MCS) and applicable software, which provides console management, control and supports up to 25 x console connections .
- Infrastructure Gateway (IG) servers and applicable software, which supports twenty (20) CSSI talkpaths.
- Licenses for AES Encryption at each console.
- AcomNOVUS Surveyor Network Management System (NMS) server for system configuration and operational monitoring and reporting.
- Thirty (30) control stations interfaces supported by fifteen (15) Acom Radio Gateways.

- Five (5) Acom Radio Gateways to interface with up to ten (10) EF Johnson VM600 control stations (control stations to be supplied, installed, configured and maintained by EFJohnson).
- One (1) Acom Pathway DFSI Gateway to interface to a DFSI base station/repeater (base station/repeater to be supplied, installed, configured and maintained by Roseville).
- Seventy-one (71) SIP logging recorder outputs supported by AcomNOVUS Media Controller (MCS) Server.
- Console integration and Interoperability testing at EFJohnson headquarters (assume North America location for 1 week testing).

1.6. Services

Project management (development of a Project Timeline and System Test Plan, Factory Acceptance Testing, documentation, and standard 1 year factory warranty), on-site training, and on-site installation will be provided by Zetron.

Installation will be completed in a single contiguous trip. Technical training will be completed in a single contiguous trip. Operational training will be completed in a single contiguous trip. Expenses and labor incurred for additional trips caused by the delay of other parties will be billed through the change order process or billed separately, and subject to prior authorization by Customer Project Manager.

1.7. Functionality

A fully redundant System with standard functionality.

1.8. Customer-Supplied Equipment

Any Customer-supplied equipment must be in working order and sent in its entirety, unless mutually agreed, to Zetron's facility at Customer's expense to enable Zetron to integrate said equipment into the System.

1.9. Project Management

Project management is an ongoing activity required of all parties for successful integration of the equipment. Zetron will assign a primary project manager ("Zetron Project Manager") who will manage the project. All Zetron subcontractors will report to the Zetron Project Manager, who will in turn liaise with Customer. Customer will be required to provide a project manager to act as a

single point of contact for the implementation of this SOW. Project Managers will be responsible for contract administration, scheduling, and monitoring progress of the assigned deliverables of their respective organizations. Formal communications must be channeled through the project managers. Formal communications are not to be routed directly between subcontractors and Customer, except as otherwise specifically stated in the Contract.

1.10. Project Kick-Off Meeting

A project kick-off meeting will be scheduled before System manufacture begins. This meeting is a working session, which uses the Contract, Statement of Work, and other pertinent documents as the basis for fully developing the implementation plan.

Contract clarification and project change order procedures will be addressed, and a formal process will be implemented for communicating any and all information that clarifies the Contract.

The implementation schedule will be clarified during the meeting. At the conclusion of the meeting all tasks will be clearly defined, with all parties understanding what is expected of them.

1.11. Project Planning

Zetron will prepare a project plan that defines the management processes, procedures, and project timeline that will be followed to deliver the System and services described in the Contract. The project plan is an internal document and will include a description of the support services to be provided by Zetron. The project plan may be submitted to Customer. The project plan will be used to guide all of Zetron's activities and to monitor and track Zetron's progress against the timeline and milestones established in the plan. The project plan will include a discussion and details on the following major elements:

- Project scope (includes an overview, definitions and glossary, project summary, roles and responsibilities, etc.)
- Project management (includes approach, project organization, project manager and task leaders, Zetron design reviews, schedule, project meetings (person-to-person and remote via telephone), acceptance criteria, etc.)
- System deliverables (includes descriptions of equipment being provided and information on System requirements, etc.)

- Installation plans and schedule (includes information on the site survey, site installation plans, site preparation, and schedule for equipment deployment and installation)
- Testing and acceptance (includes testing, optimization, and the acceptance process, including implementing the acceptance test plan)
- Documentation and publications (includes a description of general requirements and a summary of documentation deliverables)
- Training (includes training plan, training course syllabi, and a description of recommended training materials)
- Support (includes warranty service and maintenance service plans following beneficial use of the System by Customer, which begins upon successful completion of the Site Acceptance Test (SAT)

1.12. Change Orders (Modifications)

Zetron and Customer shall follow Zetron's change order process unless otherwise mutually agreed.

1.13. Site Surveys

Zetron may survey the facilities where the equipment will be installed. The purpose of the survey is to provide information to Zetron of obvious site-specific requirements. It may include a meeting to discuss programmatic and technical issues such as:

- Schedules
- Milestones
- Zetron procedures

1.14. Preliminary Design Review (PDR)

A Preliminary Design Review (PDR) will be completed to capture the technical specifications of the design and when finalized and approved, serves as an authorization to proceed. The PDR is considered a "Pass" if the participants agree they have a reasonable approach to the System design and have obtained design consensus. It is possible that at this point there may still be some minor outstanding design issues to resolve.

1.15. User Interface

Zetron will work with Customer to design the Graphical User Interface (GUI) screen configurations for the System. Design efforts will take place at 30%, 60% and 100% completion of System design. At the conclusion of these efforts, GUI screen configuration must be reviewed and accepted by Customer before FAT can begin. Labor spent on changes to the screen configuration after 100% completion of System design will be billed through the change order process. Customer will designate a single point of contact for design development.

1.16. Integration of Systems

The System will not be enabled to interface with Customer's telephone, radio and/or CAD systems unless specified elsewhere in this Contract. (Integrations included are in section 1.5 under the heading AcomNOVUS Core Equipment.)

1.17. User Training

Training will be provided as required to ensure that all dispatch personnel have a functional knowledge of the System operation. The training plan will be mutually agreed between Customer and Zetron.

End of Section 1

2. Site Assumptions and Customer Deliverables

2.1. Building/Construction Permits and Licenses

Customer is responsible for any permits, licenses, or applications for the site(s) where the System will be installed. Zetron will supply Customer with information regarding the System that is required to complete the permit and license applications. No engineering or licensed professional engineering certifications are included in Zetron's proposal to Customer or the Contract, but if requested by Customer, these certifications may be provided as change orders. This includes, but is not limited to: electrical, heating, ventilation, cooling, plumbing, structural, environmental, and seismic.

Zetron has neither included in its proposal nor accepts any responsibility for changes in the SOW that might be required by any city, county or state permit approval agency and would impact either the permit application process or the

actual work to be completed as outlined. Any such changes or upgrades of pre-existing conditions identified as required to meet current city, county, state or other applicable codes will be changes to the SOW and handled as change orders.

2.2. Authorizations

Customer must identify the person(s) with signatory authority for change orders, Contract modifications, milestones, and payment authorizations.

2.3. Requests for Information

Customer shall provide information necessary for design of the System. This includes but is not limited to: Floor layouts, furniture specifications, existing system interfaces & GUI, radio, administrative telephone, call groups, logger, digital I/Os, alarms, demarcation & punch block configuration.

2.4. Database Configuration Files

Customer is responsible for obtaining all current configurations used in their existing communication system that may be utilized in the System. The information includes, but is not limited to: Paging tones and codes, trunked radio talk-groups and ID's, site locations and frequencies, individual signaling databases, alias, and speed dial.

2.5. Database Entry Requirements

Customer is responsible for creating large database files in a suitable format for import into the console system. The effort will include, but is not limited to: Paging tones and codes, trunked radio talk-groups and ID's, site locations and frequencies, individual signaling databases, alias, and speed dial. Zetron will assist with the import process to properly input the initial database entries.

2.6. Database Accuracy

Customer is responsible for the accuracy of all database entries. This includes submitting accurate information for entry into the appropriate database. Prior to System cutover, Customer is responsible for verifying the data and testing the results, e.g., page each field unit to ensure the accuracy of the entries. An error report should be kept by the console operators for submitting error corrections to Customer's system administrator, dispatch supervisor, or a designated individual trained to update and correct each database, as an ongoing effort after the initial entry.

2.7. Site Preparatory Responsibility

Customer is responsible for preparing the facility and/or radio infrastructure for installation of the System. This duty is Customer's as they are responsible for maintaining the dispatch infrastructure. Items that are Customer's responsibility include, but are not limited to, installation of building wiring as needed, including all UPS, line protectors, line conditioners, and surge protectors, cross-connections to the network (e.g., E1 or T1 links between the center and the radio network, leased lines, T1 and/or 4W interfaces to connect remote operator positions and their audio streams to the CCE), Demarcation Line level specification testing and repair, radio and telephone interface wiring, cable pulls (e.g., between the CCE and console positions), furniture modifications and installation of custom monitor mounting, lighting, single point grounding, cabling from demarcation to the System.

Customer is responsible for confirming with Zetron cable type and cable run lengths to ensure specification compatibility. Customer is responsible for confirming site readiness prior to deployment.

2.7.1. Site Deficiencies

Customer is responsible for correcting at its expense all site deficiencies identified by Zetron or others.

2.7.2. Floor Layout

It is the responsibility of Customer to provide appropriate space to house Zetron's fixed equipment. No work will proceed without Customer's written approval of equipment placement.

2.7.3. Electrical

Customer must provide adequate electrical power. Customer will also provide all uninterruptible power supply (UPS) sources, and surge suppressors as required unless otherwise stated within this Contract. All of the equipment in the System has been designed to operate on 120VAC/60Hz commercial power. Customer must provide AC power for each console location and the fixed network equipment. All outlets for the consoles must be installed within six (6) feet of the proposed equipment installation locations. Customer will have outlets for the Common Control Equipment cabinets installed as receptacles directly above or below the footprint of the cabinets. If Customer positions the outlets below, Customer will provide appropriate access through raised floors directly below the cabinet foot print. The exact number of receptacles required will be determined prior to PDR.

Locking receptacles are the responsibility of Customer. If overhead locking receptacles are used for equipment power, it will be the responsibility of Customer to supply and install UL approved locking plugs for the multiple outlet AC surge protector power cords. Customer must confirm in writing that each of these circuits was tested and is currently ready for the Zetron installation by providing a signed report listing the results of testing. Zetron will not connect to any circuit deemed not suitable as outlined in the Zetron requirements' specifications. Zetron will not be responsible for correcting these deficiencies.

2.7.4. Grounding

A single-point terra firma ground connection will be required from Customer for electrical bonding and lightning protection in the Common Control Equipment room. This connection should be low impedance to terra firma ground (less than 5 Ohms), and have few, if any, wire bends to a grounding rod or building ground grid. Circuits must meet or exceed industry accepted standards.

Customer must confirm in writing that each of these circuits was tested and is currently ready for the Zetron installation and optimization. Zetron will not connect to any circuit deemed not suitable as outlined in the Zetron requirements' specifications. Zetron will not be responsible for correcting these deficiencies.

2.7.5. Fresh Air Ventilation, Heating, Air-Conditioning

Customer is responsible for building ventilation, heating, or air-conditioning at any equipment location. Adequate ventilation must be provided for CCE and for any furniture housing position hardware.

2.7.6. Remote Access

Customer will provide a means for remotely accessing the System for on-going technical support services. At a minimum, this can be in the form of a standard analog telephone (POTS) line or analog PBX extension within 6 feet of the Common Control Equipment cabinets. This phone line must support dial-up modem type protocols up to 56K and is in addition to the phone lines being provided for interfacing to the System telephone line interface cards. Alternately, Customer may substitute a VPN or other type of high-speed network access if agreed to by both parties.

2.7.7. Telephone and Radio Circuit Signal and Line Levels

Customer's radio audio circuits and dedicated telephone circuit (if applicable) must be tested by Customer for meeting or exceeding the demarcation parameters

for the I/O specification needs of the System. Customer is responsible for adjusting or correcting line levels that exceed demarcation parameters. Customer must confirm in writing that each of these circuits was tested and is currently ready for the Zetron installation and optimization by providing a signed report listing the results of testing. Zetron will not connect to any circuit deemed not suitable for supporting the signal and level settings, as outlined in the Zetron requirements' specifications. Zetron will not be responsible for correcting these deficiencies.

2.8. System Testing and Acceptance

Refer to Section 3.12, System Testing and Acceptance, for Customer's responsibilities.

2.9. Facilities and Access

Customer shall provide the console furniture. Keys or on-site access to the equipment rooms and cabling installation areas are to be provided by Customer as required by Zetron. Normal access hours are to be negotiated between Customer and Zetron. Access to a minimum of two unoccupied console positions simultaneously for installation is needed.

If required by Zetron, Customer shall provide a secure room at the installation site with a dial-out phone during the implementation phase of the project. This room will be used by Zetron onsite personnel for its operations; for temporarily storing System components and securing test equipment and tools; and as an office for the implementation team.

2.10. Interface Requirements

The cost for any unique interface requirement, whether or not identified in the site survey form, shall also be the responsibility of Customer.

2.11. Time Source

If Customer requires a time source for the System, Customer shall supply the time source. The supplied time source shall be equipped with at least one (unused) RS-485 port or Network Time Protocol (NTP) via IP for use by the System CCE. Customer will provide cable.

2.12. Mounting Supplies, Misc. Supplies & Misc. Cables

Zetron shall be responsible for providing demarcation punch blocks, seismic or other custom bracing and miscellaneous supplies. Miscellaneous cables not typically associated with the System will be the responsibility of Customer.

2.13. Spares

Customer will maintain spares purchased as a critical spares kit. Customer is responsible for coordinating the utilization of spares required for repair. Spares must be maintained in a controlled environment and protected from electrostatic discharge.

End of Section 2

3. Zetron Deliverables

3.1. Project Management

Zetron will provide primary project management according to this SOW. In order to reduce the overall cost to Customer, this project management effort will be performed remotely.

3.2. Project Schedule

After receipt of the signed System Contract, or a purchase order, Zetron will provide Customer with a project schedule. Preliminary schedule is included in Tab N.

3.3. Qualified Personnel

Zetron will provide qualified personnel for installation.

3.4. System Integration

Zetron will build, integrate, and test components at EFJohnson's facility prior to deployment at Customer's facilities. The System test configuration will be finalized during the project-planning task. The System will be tested during the

Factory Acceptance Test (FAT). Once the FAT has been successfully completed and approved by Customer, the System will be released for shipment.

3.5. Equipment Delivery

Zetron will arrange for delivery of all equipment to the mutually agreed to EFJohnson FAT testing facility and upon completion of FAT to Customer as outlined in the established implementation plan. Warehousing of equipment will be the responsibility of Customer.

3.6. Equipment

Zetron will install the applicable CCE and will install console positions in Customer-provided furniture per standard cabling practices. Upon completion of the fixed equipment installation, Zetron will check the System for proper operation.

3.7. Cables and Labels

All cables will be labeled with a unique identifier. As-built documentation will be supplied with the equipment which allows complete cross reference of cable material, connectors, to/from information, and Zetron part numbers for replacement.

3.8. Complete Termination of Sub-Systems

All equipment cables will be terminated as required.

3.9. Load Application Parameters on all Equipment

Where applicable, the application software will be loaded, System parameters set, and features tested. The database will be programmed and the System operating parameters will be adjusted for Customer-specific requirements. Configuration files will be set up and verified as applicable for Customer-specific requirements.

3.10. Site Clean-up

All packing materials and debris will be handled as agreed. Decommissioning and removal to customer location of existing old equipment is the responsibility of Zetron.

3.11. System Testing and Acceptance

Upon completion of the System installation, a visual inspection of the installation and the System Site Acceptance Test ("SAT") will be performed by a Zetron representative. It will be witnessed by Customer's project manager or their representative. Customer's approval of the SAT will serve as confirmation that the installation process was completed, and that Zetron has delivered a working System.

Each portion of the SAT will be marked as either passed or failed. When a test point has passed, it will not be tested again. Failed test points will be corrected and then re-tested. The correction/re-testing process will take place on the repaired/replaced test points, until all points have passed.

For any portion of the test that cannot be completed due to circumstances outside the control of Zetron, Zetron reserves the right to alter that portion of the test, default to "passed", or shall mutually agree with Customer on an alternative approach.

3.12. Training

3.12.1. Technical Training

Note that technical training can be conducted at Zetron's facility and can be made available prior to System installation immediately following Factory Acceptance Testing. Technical training is most efficient, however, when given on-site using the actual installed equipment because physical location of components and final System configuration are key factors in maintaining the System. On-site technical training will comprise standard technical content, focused where possible to cover the configuration applicable to the audience. Training will cover function, installation (when Customer is providing the installation services), configuration, and maintenance of System equipment and software. Zetron will provide training materials in the form of standard product manuals and other handouts.

3.12.2. Operational Training

Classes are at Customer's location using the installed (but not live) equipment. Operational training covers basic System operation and communication tasks using the operating software. Train-the-trainer adds workshop-style training to ensure trainer-level understanding, including how to explain the System features and functions to trainee operator/dispatchers. Zetron will provide materials in the form of standard product manuals and other handouts in addition to electronic

files of material used in class. Zetron only instructs on the operation/explanation of Zetron equipment, not on standard industry teaching practices.

3.12.3. Training Environment

On-site classes are taught at Customer's location(s).

For operational training, Zetron instructors bring a laptop PC and projector. Customer must provide a power source, writing surface (flipchart or whiteboard), and a projector screen or blank light-colored wall. Because operational training requires access to a configured, functional system and accompanying consoles, for an additional charge Zetron may be able to provide equipment for training at Customer's location.

The nature of on-site technical training may require that it be conducted in a blend of classroom and less formal environments, depending on access to Customer's actual installed equipment.

Factory classes are taught at Zetron's facility, in either a dedicated training environment on actual configured systems and consoles, or as part of FAT on Customer's actual equipment in a laboratory environment.

3.12.4. Training Materials

Training is conducted using lecture, live demonstration, and hands-on practice. Each attendee will receive copies of training materials used in class.

3.13. Manuals

3.13.1. Operation Manuals

The operator manuals will contain information, instructions, and procedures, accompanied by diagrams and on-line help files as appropriate, necessary to operate the System as delivered.

3.13.2. Installation and Maintenance Manuals

The installation and maintenance manuals will include the technical information necessary to install and maintain the System.

3.13.3. As-built Documentation

As built documentation will include System drawings and supporting information depicting the System configuration after installation.

End of Section 3

SCHEDULE C

POINT BY POINT COMPLIANCE

ZETRON, INC.

Response to City of Roseville, CA

Response for Proposals

800MHz Radio System Replacement

TAB H: Point by Point Compliance

September 7th, 2016

ZETRON 12034 134th Ct. NE | Redmond, WA 98052 | (p) 425.820.6363 | (f) 425.820.7031 | www.zetron.com

City of Roseville RFP Compliance Workbook

INSTRUCTIONS FOR COMPLETING DOCUMENT

In the tab named "Compliance Matrix", proposers are to provide a value for each identified requirement from the RFP. For each requirement, proposers shall enter their point value in each cell of the "Proposer Response" column (only those cells with a light-blue highlight), according to the following scale:

For items that are specified as "Compulsory" in the "Priority" Column **Mark in the "Proposer Response" Column:**	Respond with "Comply" if your proposal MEETS or EXCEEDS the requirement AS SPECIFIED. The City will assume a response of "Comply" indicates the requirement is satisfied and that the proposer understands the requirement.
	Respond with "Exception" if your proposal DOES NOT MEET the requirement AS SPECIFIED. Please provide a description of exactly how your proposal varies from the City's requirement(s) in the "Comments Section". Proposers are encouraged to comply with all Compulsory items to ensure that their proposal response is deemed responsive. At the discretion of the City, any Compulsory items that are note marked as "Comply" shall deem the submitted proposal as non-responsive.
For items that are NOT specified as "Compulsory" in the "Priority" Column **Mark in the "Proposer Response" Column:**	Respond with a 3 if your proposal or proposed system MEETS or EXCEEDS the requirement AS SPECIFIED. The City will assume a response of "3" indicates the requirement is satisfied in both outcome and method without any modification to user operation.
	Respond with a 2 if your proposal or proposed system does LESS THAN WHAT IS SPECIFIED and your firm believes it can still meet the intent of the requirement because your offering provides the intended outcome but requires adjustment to the method of user operations. For example, if a user operation is required and your offering provides for the same outcome of that operation but it provides it through a different method (such as a different type of button-press), respond with a 2. Please provide a description of exactly how the method of your offering varies from the City's requirement(s) and how you feel it meets the overall intent for the outcome of the requirement in the "Comments Section".
	Respond with a 1 if your proposal or proposed system does LESS THAN WHAT IS SPECIFIED. Please provide a description of exactly how your offering varies from the City's requirement(s) in the "Comments Section", including the parts of the requirement that are and are not met by your offering.
	Respond with a 0 if your proposal or proposed system **cannot meet any part of the intent of the requirement(s)**.

Proposers must provide explanations, clarifications, details, etc. to any requirement that is assigned a value of **"Exception", 2 or 1**. (Such comments are not required for values of **"Comply" or 3** as such a designation implies that proposer meets the requirement exactly as stated. Similarly, such comments are not required for point values of 0 as such a designation implies that proposer cannot in any way meet either the letter or the intent of the requirement.) Such narrative is to be provided in the specific section of the Response Document that is designated in the corresponding "Comments Section" column.

Any "Proposer Response" cell that is not assigned a value by the proposer will be assigned a value of "0" by the City.

Requirement Priorities

Priority	Definition
Compulsory	Requirements that are a either a statutory requirement for RFP responses sbmitted to the City or are required to ensure a baseline for comparison of received proposals. Items marked with a "Yes" in this column are required and cannot be omitted or cannot
Critical	In the City's view, a requirement that affects the overall viability of the project - Inability to meet a requirement of Critical priority jeopardizes user participation in the system.
High	In the City's view, an extremely important requirement - Inability to meet a requirement of High priority will prevent end users from performing their duties, or prevent overall system operation as envisioned.
Medium	In the City's view, an important requirement - Inability to meet a requirement of Medium priority will affect the way in which end users perform their duties, or affect overall system operation as envisioned.
Low	In the City's view, a requirement that is not important - Such a requirement would be "nice to have" but users can complete their duties without it, or the system can operate as envisioned.
Informational	Not a "specifications requirement" but is requested for informational purposes only.

COMMENTS SECTION

Please include sufficient detail in your proposal narrative to ensure that the City understands your proposal and how it meets or exceeds our requirements. If insufficient detail is provided to confirm your ability to meet the requirement, or if the City finds through its research and review that the proposer does not meet the intent of the requirement; the City reserves the right to reduce the value of the numeric value submitted.

Vendor Name:		Zetron		
Section	Section Description	Priority	Proposer Response	Comments
1	INTRODUCTION	Informational	3	
1.1	CITY OVERVIEW	Informational	3	
1.2	BACKGROUND	Informational	3	
1.3	INSTRUCTIONS	Compulsory	Comply	
2	TENTATIVE SCHEDULE	Informational	3	
3	OPTIONAL PRE-PROPOSAL CONFERENCE	Informational	3	
4	SOLUTION ARCHITECTURE	Informational	3	
4.1	TECHNICAL REQUIREMENTS	Informational	3	
4.1.1	TECHNICAL REQUIREMENTS: SYSTEM CORE	Medium	0	Not Applicable
4.1.1.1	COMPLIANCE TO P25 SPECIFICATIONS	High	0	Not Applicable
4.1.1.1.1	P25 TRUNKING FEATURE REQUIREMENTS	High	0	Not Applicable
4.1.1.1.1.1	GROUP VOICE CALLS AND BROADCAST GROUP CALL	Medium	0	Not Applicable
4.1.1.1.1.2	EMERGENCY ALARM	Medium	0	Not Applicable
4.1.1.1.1.3	EMERGENCY GROUP CALL	Medium	0	Not Applicable
4.1.1.1.1.4	INDIVIDUAL VOICE CALL	Medium	0	Not Applicable
4.1.1.1.1.5	ANNOUNCEMENT GROUP CALL	Medium	0	Not Applicable
4.1.1.1.1.6	ALL CALL / SYSTEM CALL	Medium	0	Not Applicable
4.1.1.1.1.7	RADIO CHECK	Medium	0	Not Applicable
4.1.1.1.1.8	CALL ALERT	Medium	0	Not Applicable
4.1.1.1.1.9	RADIO UNIT INHIBIT/UNINHIBIT	Medium	0	Not Applicable
4.1.1.1.1.10	AES ENCRYPTION	Medium	0	Not Applicable
4.1.1.1.1.11	REGISTRATION/ ROAMING	Medium	0	Not Applicable
4.1.1.1.1.12	AFFILIATION	Medium	0	Not Applicable
4.1.1.1.1.13	OVER-THE-AIR-REKEYING (OPTIONAL)	Low	0	Not Applicable
4.1.1.1.1.14	RADIO AUTHENTICATION (OPTIONAL)	Low	0	Not Applicable
4.1.1.1.1.15	GPS LOCATION (OPTIONAL)	Low	0	Not Applicable
4.1.1.1.2	NON-P25 TRUNKING FEATURE REQUIREMENTS	Low	0	Not Applicable
4.1.1.1.2.1	OVER-THE-AIR REPROGRAMMING (OPTIONAL)	Low	0	Not Applicable
4.1.1.1.2.2	DYNAMIC REGROUPING	Low	0	Not Applicable
4.1.1.1.3	P25 TRUNKING PRIORITIES REQUIREMENTS	Low	0	Not Applicable
4.1.1.1.4	SYSTEM CORE ALLOWABLE P25 ID REQUIREMENTS	Medium	0	Not Applicable
4.1.1.1.5	SYSTEM CORE INITIAL CAPACITY REQUIREMENTS	Medium	0	Not Applicable
4.1.1.1.6	SYSTEM CORE EXPANSION REQUIREMENTS	Low	0	Not Applicable
4.1.1.1.7	SYSTEM CORE CALL PROCESSING REQUIREMENTS	Low	0	Not Applicable
4.1.1.1.8	SYSTEM CORE "INTERNAL" INTEROPERABILITY REQUIREMENTS	High	0	Not Applicable
4.1.1.1.9	SYSTEM CORE "EXTERNAL" INTEROPERABILITY REQUIREMENTS	Medium	0	Not Applicable
4.1.1.1.10	SYSTEM CORE RELIABILITY REQUIREMENTS	Critical	0	Not Applicable
4.1.1.1.11	CORE / NETWORK MANAGEMENT FEATURE REQUIREMENTS	Medium	0	Not Applicable
4.1.1.1.11.1	FAULT MANAGEMENT	Medium	0	Not Applicable
4.1.1.1.11.2	CONFIGURATION MANAGEMENT	Medium	0	Not Applicable
4.1.1.1.11.3	ACCOUNTING MANAGEMENT	Medium	0	Not Applicable
4.1.1.1.11.4	PERFORMANCE MANAGEMENT	Medium	0	Not Applicable
4.1.1.1.11.5	SECURITY MANAGEMENT	Medium	0	Not Applicable
4.1.1.1.12	NETWORK MANAGEMENT ARCHITECTURE REQUIREMENTS	Medium	0	Not Applicable

Vendor Name:		Zetron		
Section	Section Description	Priority	Proposer Response	Comments
4.1.1.2	PTT APPLICATION INTEGRATION (OPTIONAL)	Low	0	Not Applicable
4.1.1.3	SYSTEM CORE NETWORK BACKHAUL REQUIREMENTS	Medium	0	Not Applicable
4.1.1.4	SYSTEM CORE CAD INTERFACE REQUIREMENTS (OPTIONAL)	Low	0	Not Applicable
4.1.1.5	SYSTEM CORE NETWORK TIME SYNCHRONIZATION REQUIREMENTS	Medium	0	Not Applicable
4.1.1.6	SYSTEM CORE NETWORK SECURITY REQUIREMENTS	Medium	0	Not Applicable
4.1.1.7	TECHNICAL REQUIREMENTS: SPARE EQUIPMENT	Medium	0	Not Applicable
4.1.2	TECHNICAL REQUIREMENTS: RF SUBSYSTEM	Medium	0	Not Applicable
4.1.2.1	DEFINITION OF RF SUBSYSTEM COMPONENTS	Medium	0	Not Applicable
4.1.2.2	RF SUBSYSTEM FEATURE (P25 AND NON-P25) REQUIREMENTS	Medium	0	Not Applicable
4.1.2.3	RF SUBSYSTEM ANTENNA SYSTEM REQUIREMENTS	Medium	0	Not Applicable
4.1.2.4	RF SUBSYSTEM COVERAGE REQUIREMENTS	Critical	0	Not Applicable
4.1.2.5	RF SUBSYSTEM IN-BUILDING COVERAGE REQUIREMENTS	Critical	0	Not Applicable
4.1.2.5.1	IN-BUILDING COVERAGE TESTING:	Critical	0	Not Applicable
4.1.2.5.1.1	AUTOMATED OBJECTIVE BUILDING TESTING	Critical	0	Not Applicable
4.1.2.5.1.2	TEST CONFIGURATIONS	Critical	0	Not Applicable
4.1.2.6	RF SUBSYSTEM IN-BUILDING COVERAGE REQUIREMENTS (INFORMATION ONLY)	Medium	0	Not Applicable
4.1.2.7	RF SUBSYSTEM COVERAGE – RADIO SITES	Informational	0	Not Applicable
4.1.2.8	RF SUBSYSTEM COVERAGE GUARANTEE	Critical	0	Not Applicable
4.1.2.9	RF SUBSYSTEM COVERAGE MAP REQUIREMENTS	Critical	0	Not Applicable
4.1.2.10	RF SUBSYSTEM COVERAGE DESIGN REQUIREMENTS	Critical	0	Not Applicable
4.1.2.11	RF SUBSYSTEM COVERAGE TEST AND REMEDIES	High	0	Not Applicable
4.1.2.12	RF SUBSYSTEM RELIABILITY REQUIREMENT	High	0	Not Applicable
4.1.2.13	RF SUBSYSTEM EXPANSION REQUIREMENTS	Medium	0	Not Applicable
4.1.2.14	RF SUBSYSTEM NETWORK BACKHAUL REQUIREMENTS	Medium	0	Not Applicable
4.1.2.15	RF SUBSYSTEM NETWORK MICROWAVE LINK REQUIREMENTS	Medium	0	Not Applicable
4.1.2.16	RF SUBSYSTEM EAST SITE (5100 PHILLIP RD) LINK REQUIREMENTS	Medium	0	Not Applicable
4.1.3	TECHNICAL REQUIREMENTS: RF SUBSYSTEM REPEATERS	Medium	0	Not Applicable
4.1.3.1	RADIO REPEATER – RADIO PARAMETRIC REQUIREMENTS	Medium	0	Not Applicable
4.1.3.2	RADIO REPEATER – REPEATER INDICATOR REQUIREMENTS	Low	0	Not Applicable
4.1.3.3	RADIO REPEATER – REPEATER ELECTRICAL POWER REQUIREMENTS	Low	0	Not Applicable
4.1.3.4	RADIO REPEATER – REPEATER PROGRAMMING REQUIREMENTS	Low	0	Not Applicable
4.1.3.5	TECHNICAL REQUIREMENTS: TEST EQUIPMENT	Low	0	Not Applicable

Vendor Name:		Zetron		
Section	Section Description	Priority	Proposer Response	Comments
4.1.3.6	TECHNICAL REQUIREMENTS: SPARE EQUIPMENT	Low	0	Not Applicable
4.1.4	TECHNICAL REQUIREMENTS: DISPATCH CONSOLE SUBSYSTEM	Informational	3	Comply; the proposed Zetron AcomNOVUS dispatch console system is configured to support a wireline P25 CSSI connection to the RFSS core.
4.1.4.1	WIRELINE DISPATCH CONSOLE REQUIREMENTS	Informational	3	Comply; the proposed AcomNOVUS dispatch console system is configured to support the specified ten (10) wireline Dispatch Consoles located at the City of Roseville Dispatch Center.
4.1.4.1.1	WIRELINE DISPATCH CONSOLE COMPONENTS	Low	3	The proposed AcomNOVUS Dispatch console position components include a computer workstation, 23" flat panel display, trackball, footswitch, two headset jack boxes with wired headsets, four external speakers and instant recall recorder (IRR i.e. call-check). The proposed AcomNOVUS system will include all necessary cables, switches and all other hardware and software to meet the dispatch console portion of this RFP. Note that any third party CSSI interface license to the P25 RFSS core has not been included in Zetron's response.
4.1.4.2	WIRELINE DISPATCH CONSOLE COMPONENTS – OPTIONS	Low	3	The AcomNOVUS Dispatch Console can be configured to support touch-screen monitor operation as desired, optional pricing for this capability has been included. Each Dispatch console can be equipped with a desk microphone with a push-to-talk (PTT) button used to transmit, these are priced as an option. In addition AcomNOVUS can support AES-encryption on radio transmissions and this is provided as an addtional cost option.
4.1.4.3	WIRELINE DISPATCH CONSOLE DISPLAY / AUDIO CAPABILITIES	High	3	The AcomNOVUS console system provides a highly configurable console user interface. Screen design provides customizable controls and attributes, similar in function to familiar and standard software user interface development environments. This flexibility allows an AcomNOVUS Dispatch console to be configured to support up to 8 pages of radio modules that contains up to 36 modules per page. Each radio module can be configured with conventional channel & / or talkgroup distict indivdual names and independent volume controls.
4.1.4.4	WIRELINE DISPATCH CONSOLE PUSH-TO-TALK CAPABILITIES	Medium	3	
4.1.4.5	WIRELINE DISPATCH CONSOLE OPERATIONAL FEATURES	High	2	The AcomNOVUS console system positions support the following operational features; a)Talkgroup and announcement calls b)Individual calls c) System all-calls d)Displays unit ID or alias e)Simultaneous transmissions priority override f)The AcomNOVUS console system provides a robust patching interface to allow interconnection of multiple radio resources. Each console has six patch and six conference groups available per console position. In addtion AcomNOVUS also supports up to 200 Global Patches. The six console patch groups are not counted against the 200 available Global patches. g) Supergrouping (aka dynamic regrouping) is not currently a published feature in the CSSI standard. Once the feature is ratified and published Zetron will implement and provide this capability in our CSSI feature set. Once radio vendors begin to provide the dynamic regrouping feature in their CSSI implementation, Zetron will test the capability as part of our ongoing test processes. Note: Zetron has already implemented and deployed this P25 feature in a privileged interface to a P25 network vendor (Airbus) and is completing this capability for an EFJohnson project that will be deployed this year. Once the CSSI standard is ratified is committed to providing a compliant Standards based supergrouping solution to our customers. h)AcomNOVUS can support a number of multi-select groups as required. i) The proposed AcomNOVUS system can be configured to handle emergency calls as required. Upon receipt of an emergency call, the radio channel line button switches to the emergency call color (typically red) and the button displays the incoming call PTT-ID. A pre-assigned emergency audible prompt is annunciated if programmed. The incoming emergency calls will be placed in the AcomNOVUS History Call Stack, once the calls are cleared. j) Radio Monitor is a standard CSSI feature available through the open standard console system interface and is supported by AcomNOVUS. k) The AcomNOVUS console position PC is equipped and connected to the network with a dual Ethernet ports. In the event of the loss of communications to the AcomNOVUS core the console position is notified. l) Each of AcomNOVUS console position can generate up to eight (8) distinct alert tones. m) AcomNOVUS is capable of supporting Two-Tone signaling. n) Channel-marker is a standard feature supported by AcomNOVUS. o)Cross-busy indication is supported by the proposed AcomNOVUS system.

Vendor Name:		Zetron		
Section	Section Description	Priority	Proposer Response	Comments
4.1.4.6	WIRELINE DISPATCH CONSOLE INSTANT RECALL RECORDER	Medium	3	The AcomNOVUS feartures a standalone application Instant Recall Recorder (IRR) which provides call recording and playback capability. It is designed to augment voice recorders by providing a non-archiving recording system local to the operator. The playback is truly instant, and the ability to play back is not limited by the availability of the PC network or recording server. The application uses the local hard-drive in the PC for storage, record time allocation is configureable based on the needs. Once the allocated PC hard-drive memory has been filled the oldest recordings are recycled. However, a save feature can be used to retain any desired recording. Playback is initiated by selecting a call or calls from the list. Playback controls are very similar to other soft-buttons on PC media players which are shown on the console display screen.
4.1.4.7	WIRELINE DISPATCH CONSOLE TELEPHONE SYSTEM INTEGRATION	High	2	The proposed AcomNOVUS system includes a NENA compliant telephone radio headset interface(TRHI) for each position. When an operator answers an emergency call from the City's Viper phone system the off hook indication will trigger the TRHI to let the phone converstion pass through the headset and mutes the radio traffic. This interface effectively allows the dispatcher to switch between the AcomNOVUS system for radio calls and the 911 telephone system using the same headset to switch between the systems.
4.1.4.8	WIRELINE DISPATCH CONSOLE CONVENTIONAL CHANNEL INTERFACE REQUIREMENTS	Medium	3	The AcomNOVUS console system core will be provisioned to provide a minium of thirty two (32) conventional 2-wire and/or 4-wire connections with tone remote capabilies to individual control stations. Note: Zetron assumes the control station radios are capable of decoding EIA tone remote keying sequences. If not, additional EIA tone adapters will be required that have not been included in the pricing.
4.1.4.9	WIRELINE DISPATCH CONSOLE CAD INTERFACE (OPTIONAL)	Low	2	The AcomNOVUS system can be equipped with an application within the system called "Surveyor". Surveyor can communicate with the CAD system via XML protocol and can support the following CAD interface requirements of this RFP; • Channel activity • Talkgroup ID • Radio ID • Radio status •Radio call-alert The AcomNOVUS CAD interface will allow the CAD system to initiate a group call & unit ID call commands to the console.
4.1.4.10	SOFTWARE APPLICATION-BASED CONSOLE (OPTIONAL)	Low	3	The AcomNOVUS console software can be hosted on a laptop via wired IP connection with a sound card utilized for audio on two channels and a USB headset for the dispatcher (optional pricing has been provided). This is to allow a position to be added locally or remotely to the system for management, maintenance access to monitor ongoing operations, or dispatching capabilities. The mobility console can do everything a standard Media Dock-equipped console can, with a few exceptions. The mobility console does not support the following: • NENA phone integration • IRR integration • Headset detection for enabling Select speaker • Footswitch or other local I/O The AcomNOVUS soft console applications is compatible with a standard laptop PC resolution and will operate in a Windowed environment as a Window and can be minimized. **Voice Bandwidth*** Per channel in each direction: 64kbps plus 16kbps overhead **Data Bandwidth*** Varies by activity; estimate 90Kbps needed per console

Vendor Name:		Zetron		
Section	Section Description	Priority	Proposer Response	Comments
4.1.4.11	CSSI OPERATIONAL FEATURES	Medium	2	Zetron has developed our CSSI interface based on the standards, we have also developed some "Radio Manufacturer Specific" features however; all features documented in the standards that are developed, are developed to the published standards. Features not supported: • Airbus Privileged V2.06, V3.01 • E/RTT - Airbus Privileged • End-to-End Encryption (non-FIPS) • FIPS Encryption • Announcement and System Groups • Failsoft Mode • Supergrouping/dynamic regrouping • Radio Unit Monitor • Location information • Late Entry
4.1.4.12	DISPATCH CONSOLE – CONSOLE PROGRAMMING REQUIREMENTS	Low	2	The proposed AcomNOVUS system will be equipped with Windows 8 PC software, cabling, and equipment to program and maintain the dispatch console system described in this RFP. Changes and updates to the AcomNOVUS console positions are performed by using the Acom Position Manager. The Acom Position Manager is a Zetron Windows application for administering the Acom VoIP Controller service on each console. Acom Position Manager can edit a new configuration derived from factory default settings, a previously saved configuration file, or currently used settings pulled from the local or any network-connected Acom Dispatch console. A configuration can also be pushed from Acom Position Manager to local or any network-connected Acom consoles.
4.1.4.13	TECHNICAL REQUIREMENTS: SPARE EQUIPMENT	Low	2	A comprehensive set of spare parts to maintain and used for repairs will be included in the offer.
4.1.5	TECHNICAL REQUIREMENTS: LOGGING RECORDER SYSTEM	Informational	0	Not Applicable
4.1.5.1	VOICE LOGGING RECORDER REQUIREMENTS	Medium	0	Not Applicable
4.1.5.2	P25 RF SUBSYSTEM COMPLIANCE	Medium	0	Not Applicable
4.1.5.3	TECHNICAL REQUIREMENTS: SPARE EQUIPMENT	Low	0	Not Applicable
4.1.6	TECHNICAL REQUIREMENTS: PORTABLE SUBSCRIBER RADIOS	Informational	0	Not Applicable
4.1.6.1	PORTABLE SUBSCRIBER RADIO MODE OF OPERATION REQUIREMENTS	Low	0	Not Applicable
4.1.6.2	PORTABLE SUBSCRIBER RADIO VOCODER REQUIREMENTS	Low	0	Not Applicable
4.1.6.3	PORTABLE SUBSCRIBER NFPA ROADMAP	Low	0	Not Applicable
4.1.6.4	PORTABLE SUBSCRIBER RADIO P25 TRUNKING FEATURE REQUIREMENTS	High	0	Not Applicable
4.1.6.4.1	GROUP VOICE CALLS AND BROADCAST GROUP CALL	Medium	0	Not Applicable
4.1.6.4.2	EMERGENCY ALARM	Medium	0	Not Applicable
4.1.6.4.3	EMERGENCY GROUP CALL	Medium	0	Not Applicable
4.1.6.4.4	INDIVIDUAL VOICE CALL	Medium	0	Not Applicable
4.1.6.4.5	ANNOUNCEMENT GROUP CALL	Medium	0	Not Applicable
4.1.6.4.6	ALL CALL / SYSTEM CALL	Medium	0	Not Applicable
4.1.6.4.7	RADIO CHECK	Medium	0	Not Applicable
4.1.6.4.8	CALL ALERT	Medium	0	Not Applicable
4.1.6.4.9	RADIO UNIT INHIBIT/UNINHIBIT	Medium	0	Not Applicable

Vendor Name:		Zetron		
Section	Section Description	Priority	Proposer Response	Comments
4.1.6.4.10	AES ENCRYPTION (OPTIONAL)	Medium	0	Not Applicable
4.1.6.4.11	REGISTRATION/ ROAMING	Medium	0	Not Applicable
4.1.6.4.12	AFFILIATION	Medium	0	Not Applicable
4.1.6.4.13	OVER-THE-AIR-REKEYING (OPTIONAL)	Low	0	Not Applicable
4.1.6.4.14	RADIO AUTHENTICATION (OPTIONAL)	Low	0	Not Applicable
4.1.6.4.15	GPS LOCATION (OPTIONAL)	Low	0	Not Applicable
4.1.6.4.16	ALLOWABLE P25 ID REQUIREMENTS	Medium	0	Not Applicable
4.1.6.5	NON-P25 TRUNKING FEATURE REQUIREMENTS	Low	0	Not Applicable
4.1.6.5.1	OVER-THE-AIR REPROGRAMMING (OPTIONAL)	Low	0	Not Applicable
4.1.6.5.2	DYNAMIC REGROUPING	Low	0	Not Applicable
4.1.6.5.3	MAN-DOWN FUNCTIONALITY (OPTIONAL)	Low	0	Not Applicable
4.1.6.5.4	PORTABLE RADIO TALKGROUP AUDIO RECORDING (OPTIONAL)	Low	0	Not Applicable
4.1.6.5.5	PORTABLE SUBSCRIBER RADIO SCAN MODE REQUIREMENTS	Medium	0	Not Applicable
4.1.6.6	PORTABLE SUBSCRIBER RADIO – RADIO PARAMETRIC REQUIREMENTS	Medium	0	Not Applicable
4.1.6.7	PORTABLE SUBSCRIBER RADIO PROGRAMMING CAPACITY AND CAPABILITY REQUIREMENTS	Low	0	Not Applicable
4.1.6.8	PORTABLE SUBSCRIBER RADIO CONNECTOR REQUIREMENTS	Medium	0	Not Applicable
4.1.6.9	PORTABLE SUBSCRIBER RADIO – MODELS TO BE PROPOSED	Informational	0	Not Applicable
4.1.6.9.1	PORTABLE SUBSCRIBER RADIO – DUAL-BAND PUBLIC SAFETY MODEL REQUIREMENTS	Medium	0	Not Applicable
4.1.6.9.2	PORTABLE SUBSCRIBER RADIO – SINGLE BAND PUBLIC SAFETY MODEL REQUIREMENTS	Medium	0	Not Applicable
4.1.6.9.3	PORTABLE SUBSCRIBER RADIO – SINGLE BAND PUBLIC SERVICE MODEL REQUIREMENTS	Medium	0	Not Applicable
4.1.6.9.4	PORTABLE SUBSCRIBER RADIO – ENVIRONMENTAL REQUIREMENTS (APPLIES TO ALL TIERS)	High	0	Not Applicable
4.1.6.9.5	PORTABLE SUBSCRIBER RADIO BATTERY AND BATTERY CHARGING REQUIREMENTS (APPLIES TO ALL TIERS)	Medium	0	Not Applicable
4.1.6.9.6	PORTABLE SUBSCRIBER RADIO BATTERY INTRINSICALLY SAFE REQUIREMENTS (OPTIONAL)	Low	0	Not Applicable
4.1.6.9.7	PORTABLE SUBSCRIBER RADIO BATTERY CHARGER UNIT REQUIREMENTS (APPLIES TO ALL TIERS)	Medium	0	Not Applicable
4.1.6.10	PORTABLE SUBSCRIBER RADIO ACCESSORY REQUIREMENTS	Low	0	Not Applicable
4.1.6.11	PORTABLE SUBSCRIBER RADIO – PROGRAMMING SECURITY	Low	0	Not Applicable
4.1.6.12	PORTABLE SUBSCRIBER RADIO – AUTHENTICATION PROGRAMMING	Low	0	Not Applicable
4.1.6.13	PORTABLE SUBSCRIBER RADIO PROGRAMMING REQUIREMENTS	Low	0	Not Applicable

Vendor Name:		Zetron		
Section	Section Description	Priority	Proposer Response	Comments
4.1.7	TECHNICAL REQUIREMENTS: MOBILE SUBSCRIBER RADIOS	Informational	0	Not Applicable
4.1.7.1	MOBILE SUBSCRIBER RADIO MODE OF OPERATION REQUIREMENTS	Low	0	Not Applicable
4.1.7.2	MOBILE SUBSCRIBER RADIO VOCODER REQUIREMENTS	Low	0	Not Applicable
4.1.7.3	MOBILE SUBSCRIBER RADIO P25 TRUNKING FEATURE REQUIREMENTS	High	0	Not Applicable
4.1.7.3.1	GROUP VOICE CALLS AND BROADCAST GROUP CALL	Medium	0	Not Applicable
4.1.7.3.2	EMERGENCY ALARM	Medium	0	Not Applicable
4.1.7.3.3	EMERGENCY GROUP CALL	Medium	0	Not Applicable
4.1.7.3.4	INDIVIDUAL VOICE CALL	Medium	0	Not Applicable
4.1.7.3.5	ANNOUNCEMENT GROUP CALL	Medium	0	Not Applicable
4.1.7.3.6	ALL CALL / SYSTEM CALL	Medium	0	Not Applicable
4.1.7.3.7	RADIO CHECK	Medium	0	Not Applicable
4.1.7.3.8	CALL ALERT	Medium	0	Not Applicable
4.1.7.3.9	RADIO UNIT INHIBIT/UNINHIBIT	Medium	0	Not Applicable
4.1.7.3.10	AES ENCRYPTION (OPTIONAL)	Medium	0	Not Applicable
4.1.7.3.11	REGISTRATION/ ROAMING	Medium	0	Not Applicable
4.1.7.3.12	AFFILIATION	Medium	0	Not Applicable
4.1.7.3.13	OVER-THE-AIR-REKEYING (OPTIONAL)	Low	0	Not Applicable
4.1.7.3.14	RADIO AUTHENTICATION (OPTIONAL)	Low	0	Not Applicable
4.1.7.3.15	GPS LOCATION (OPTIONAL)	Low	0	Not Applicable
4.1.7.3.16	ALLOWABLE P25 ID REQUIREMENTS	Medium	0	Not Applicable
4.1.7.4	NON-P25 TRUNKING FEATURE REQUIREMENTS	Low	0	Not Applicable
4.1.7.4.1	OVER-THE-AIR REPROGRAMMING (OPTIONAL)	Low	0	Not Applicable
4.1.7.4.2	DYNAMIC REGROUPING	Low	0	Not Applicable
4.1.7.4.3	MOBILE SUBSCRIBER RADIO SCAN MODE REQUIREMENTS	Low	0	Not Applicable
4.1.7.5	MOBILE SUBSCRIBER RADIO – RADIO PARAMETRIC REQUIREMENTS	Low	0	Not Applicable
4.1.7.6	MOBILE SUBSCRIBER RADIO PROGRAMMING CAPACITY AND CAPABILITY REQUIREMENTS	Medium	0	Not Applicable
4.1.7.7	MOBILE SUBSCRIBER RADIO CONNECTOR REQUIREMENTS	Medium	0	Not Applicable
4.1.7.8	MOBILE SUBSCRIBER RADIO PHYSICAL CONSTRUCTION REQUIREMENTS	Low	0	Not Applicable
4.1.7.9	MOBILE SUBSCRIBER RADIO – MODELS TO BE PROPOSED	Informational	0	Not Applicable
4.1.7.9.1	MOBILE SUBSCRIBER RADIO – DUAL-BAND PUBLIC-SAFETY MODEL REQUIREMENTS	Medium	0	Not Applicable
4.1.7.9.2	MOBILE SUBSCRIBER RADIO – DUAL-BAND PUBLIC-SAFETY (DUAL-CONTROL HEAD) MODEL REQUIREMENTS	Medium	0	Not Applicable
4.1.7.9.3	MOBILE SUBSCRIBER RADIO – SINGLE BAND PUBLIC-SAFETY (DUAL-CONTROL HEAD) MODEL REQUIREMENTS	Medium	0	Not Applicable
4.1.7.9.4	MOBILE SUBSCRIBER RADIO – SINGLE BAND PUBLIC-SAFETY MODEL REQUIREMENTS	Medium	0	Not Applicable
4.1.7.9.5	MOBILE SUBSCRIBER RADIO –PUBLIC-SAFETY MOTORCYCLE MODEL REQUIREMENTS	Medium	0	Not Applicable

Vendor Name:		Zetron		
Section	Section Description	Priority	Proposer Response	Comments
4.1.7.9.6	MOBILE SUBSCRIBER RADIO – SINGLE BAND PUBLIC SERVICE MODEL REQUIREMENTS	Medium	0	Not Applicable
4.1.7.9.7	MOBILE SUBSCRIBER RADIO – ENVIRONMENTAL REQUIREMENTS	High	0	Not Applicable
4.1.7.10	MOBILE SUBSCRIBER RADIO – PROGRAMMING SECURITY	Medium	0	Not Applicable
4.1.7.11	MOBILE SUBSCRIBER RADIO PROGRAMMING REQUIREMENTS	Low	0	Not Applicable
4.1.8	TECHNICAL REQUIREMENTS: CONTROL STATION EQUIPMENT	Medium	0	Not Applicable
4.1.8.1	CONTROL STATION RADIO REQUIREMENTS	Medium	0	Not Applicable
4.2	SITE POWER AND RACKING REQUIREMENTS	Informational	0	Not Applicable
4.2.1	SITE POWER REQUIREMENTS	Informational	0	Not Applicable
4.2.1.1	SITE POWER REQUIREMENTS FOR SYSTEM CORE EQUIPMENT	Informational	0	Not Applicable
4.2.1.2	SITE POWER REQUIREMENTS FOR RF SUBSYSTEM SITES	Medium	3	Comply
4.2.2	EQUIPMENT RACK REQUIREMENTS	Informational	3	
4.2.2.1	RACK REQUIREMENTS	Low	3	Comply
4.2.2.2	MOUNTING REQUIREMENTS	Low	3	Comply
4.3	SITE WORKMANSHIP REQUIREMENTS	Informational	3	Understood
4.3.1	DAMAGES	Medium	3	Comply as it relates to the dispatch console equipment.
4.3.2	ACCEPTABLE STANDARDS	Medium	3	Comply as it relates to the dispatch console equipment.
4.3.3	GENERAL GROUNDING AND CABLING REQUIREMENTS	Medium	3	Comply as it relates to the dispatch console equipment.
4.3.4	PUNCH BLOCK REQUIREMENTS	Medium	3	Comply as it relates to the dispatch console equipment.
4.3.5	CABLE LABELING REQUIREMENTS	Medium	3	Comply as it relates to the dispatch console equipment.
4.3.6	CABLE ROUTING REQUIREMENTS	Medium	2	Comply as it relates to the dispatch console equipment. Zetron shall be responsible for providing cabling within our controller cabinet and within the console position. Cabling between the controller and building MDF and LAN cabling between controller and console positions shall be provided by others.
4.3.7	LIGHTNING SUPPRESSION REQUIREMENTS	Medium	0	Not Applicable
4.3.8	RACK ACCESS AND GROUNDING REQUIREMENTS	Medium	3	Comply as it relates to the dispatch console equipment.
4.3.9	INITIATION AND COMPLETION OF WORK REQUIREMENTS	Medium	3	Comply as it relates to the dispatch console equipment and installation services.
4.4	PROJECT DEPLOYMENT REQUIREMENTS FOR SERVICES	Medium	3	Comply as it relates to the dispatch console equipment and installation services.
4.4.1.1	PROJECT MANAGEMENT SERVICES	Medium	3	Comply as it relates to the dispatch console equipment and installation services.
4.4.1.2	LICENSING SUPPORT SERVICES	Medium	0	Not Applicable
4.4.1.3	FREQUENCY PLANNING SERVICES	Medium	0	Not Applicable
4.4.1.4	TOWER ANALYSIS AND SERVICES	Medium	0	Not Applicable
4.4.1.5	SYSTEM CUTOVER SERVICES AND CUTOVER PLAN	Medium	3	Comply as it relates to the dispatch console equipment and installation services.
4.4.1.6	FLEET MAPPING SERVICES	Medium	0	Not Applicable
4.4.1.7	STAGING SERVICES	Medium	3	Comply as it relates to the dispatch console equipment and installation services.
4.4.1.8	FIELD IMPLEMENTATION & OPTIMIZATION SERVICES	Medium	3	Comply as it relates to the dispatch console equipment and installation services.
4.4.1.9	SYSTEM TESTING AND ACCEPTANCE SERVICES	High	3	Comply as it relates to the dispatch console equipment and installation services.
4.4.1.10	PORTABLE SUBSCRIBER RADIO IMPLEMENTATION SERVICES	High	0	Not Applicable
4.4.1.11	MOBILE SUBSCRIBER RADIO IMPLEMENTATION SERVICES	High	0	Not Applicable
4.4.1.12	TRAINING SERVICES	Medium	3	Comply as it relates to the dispatch console equipment and installation services.

Vendor Name:		Zetron		
Section	Section Description	Priority	Proposer Response	Comments
4.4.1.13	DOCUMENTATION SERVICES	Medium	3	Comply as it relates to the dispatch console equipment.
4.4.1.14	SERVICES – PROJECT MANAGEMENT PLAN	Medium	2	Please refer to TAB C Qualifications of Team document
4.4.1.15	INTEROPERABILITY TESTING (OPTIONAL)	Critical	3	Comply as it relates to the dispatch console equipment interfacing via P25 CSSI.
4.4.1.16	INTEROPERABILITY TESTING SUPPORT (OPTIONAL)	Critical	2	Comply as it relates to the dispatch console equipment interfacing via P25 CSSI.
4.5	SYSTEM SUPPORT AND MAINTENANCE REQUIREMENTS	Informational	3	Comply as it relates to the dispatch console equipment.
4.5.1	INFRASTRUCTURE SUPPORT & MAINTENANCE GENERAL REQUIREMENTS	Medium	2	Comply as it relates to the dispatch console equipment. Please refer to the information on Zetron's Gold Maintenance Service Plan for details about our proposed offer. Zetron does not offer a support website . Zetron has local authorized service representatives (for example, Silke Communications), to provide on-site technical support. Per Clause 4.5.6, should the City take on a self-maintaining role, the Gold Maintenance Service Plan costs can be reduced, per the pricing table.
4.5.2	SYSTEM WARRANTY	Medium	3	Comply as it relates to the dispatch console equipment.
4.5.3	INFRASTRUCTURE SUPPORT & MAINTENANCE REQUIREMENTS – OPTIONAL SERVICES	Low	3	Comply as it relates to the dispatch console equipment.
4.5.4	SUBSCRIBER RADIO SOFTWARE UPDATE REQUIREMENTS	Medium	0	Not Applicable
4.5.5	SUBSCRIBER SUPPORT & MAINTENANCE REQUIREMENTS	Medium	0	Not Applicable
4.5.6	SELF-MAINTAINED SUPPORT REQUIREMENTS	High	2	Comply as it relates to the dispatch console equipment. For an AcomNOVUS system of this size and complexity Zetron would recommend at a minimum one non-dedicated trained technician to be available to support the AcomNOVUS console system. In practice, due to personnel scheduling and labor policies this may require several non-dedicated technicians to be trained such that 7x24 coverage can be provided. Per Clause 4.5.1, should the City take on a self-maintaining role, the Gold Maintenance Service Plan costs can be reduced, per the pricing table.
4.6	PRODUCT AVAILABILITY AND LIFECYCLE SUPPORT REQUIREMENTS	Informational	3	Understood
4.6.1	PRODUCT SHIPPING STATUS REQUIREMENTS	High	3	Comply as it relates to the dispatch console equipment.
4.6.2	PRODUCT AVAILABILITY REQUIREMENTS	Medium	3	Comply as it relates to the dispatch console equipment.
4.6.3	PRODUCT LIFECYCLE SUPPORT REQUIREMENTS	Medium	3	Comply as it relates to the dispatch console equipment.
5	ASSURANCE OF DESIGNATED PROJECT TEAM	Medium	2	Please refer to TAB C Qualifications of Team document
6	PROPOSAL FORMAT REQUIREMENTS	Compulsory	3	Comply
7	SUBMITTAL INSTRUCTIONS	Compulsory	3	Comply
8	EVALUATION CRITERIA	Compulsory	3	Comply
9	SELECTION PROCESS	Compulsory	3	Comply
10	GENERAL TERMS & CONDITIONS	Compulsory	3	Comply

SCHEDULE D

SOLUTION ARCHITECTURE

ZETRON, INC.

Response to City of Roseville, CA

Response for Proposals

800MHz Radio System Replacement

TAB D: Solution Architecture

March 2, 2017

ZETRON 12034 134th Ct. NE | Redmond, WA 98052 | (p) 425.820.6363 | (f) 425.820.7031 | www.zetron.com

City of Roseville, CA Dispatch Consoles

Console System Overview

The AcomNOVUS console system proposed for City of Roseville, CA, consists of a single AcomNOVUS core at the City of Roseville Dispatch Center.

The AcomNOVUS Core consists of Media Controller Servers (MCS) and Infrastructure Gateway (IG) servers. The system components are deployed in a redundant configuration to maximize up-time and prevent a single point of failure from compromising operation. This configuration includes servers deployed in pairs to host redundant services and withstand a server or service fault. It also includes a network switch stack with redundant links to each server. The individual AcomNOVUS console positions and various communication gateways are connected to portal services hosted in the Acom Core over IP networks.

Communications to external resources are configured as:

- P25 RFSS CSSI voice paths will be made through the redundant Infrastructure Gateway (IG) servers, augmented with the standard CSSI interface feature set.
- Conventional radio, and control station interfaces will be provided through the Acom Radio Gateways (ARGs).

System Configuration

The Zetron proposal includes Acom full feature console positions with advanced dispatcher capabilities. It also includes all AcomNOVUS core equipment needed to interface to external communication resources, as well as management hardware and software to manage and configure the system and console positions (as specified below).

Console Positions

Each of the ten (10) full feature console positions consists of:

- One (1) x PC workstation with one (1) 22" Touch Screen monitor for running the ACS console application. (Larger screen sizes are available if required).
- One (1) x Acom Media Dock XS.
- Four (4) x Zetron Acom speakers with individual volume controls (1 x Select and 3 x Monitor).
- Two (2) x Headset jack boxes (dual-prong interface for headset control with dual volume controls).
- One (1) x Footswitch.
- One (1)x Desktop Microphone
- One (1) x Acom Console Software (ACS) application with Pro Console license. This includes the following feature licenses:
  - Base Acom Console License
  - Advanced Radio Control License
  - Tone Signaling / Paging Feature Set License
  - Telephony Feature Set License
  - Call System License

- Auxiliary I/O License
- Integrator IRR Client License

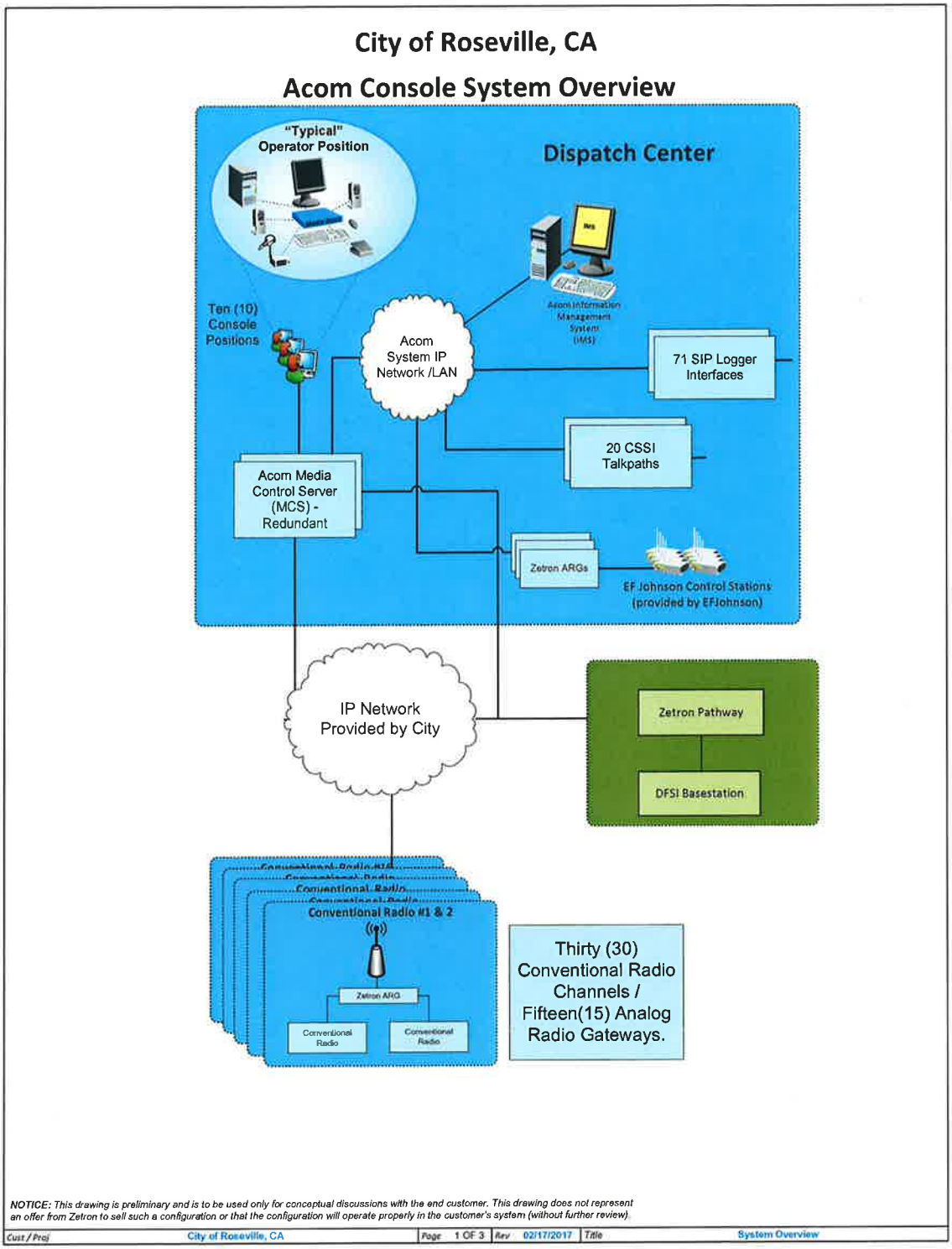
AcomNOVUS Core Equipment

The AcomNOVUS Core equipment at the City of Roseville Dispatch Center location consists of:

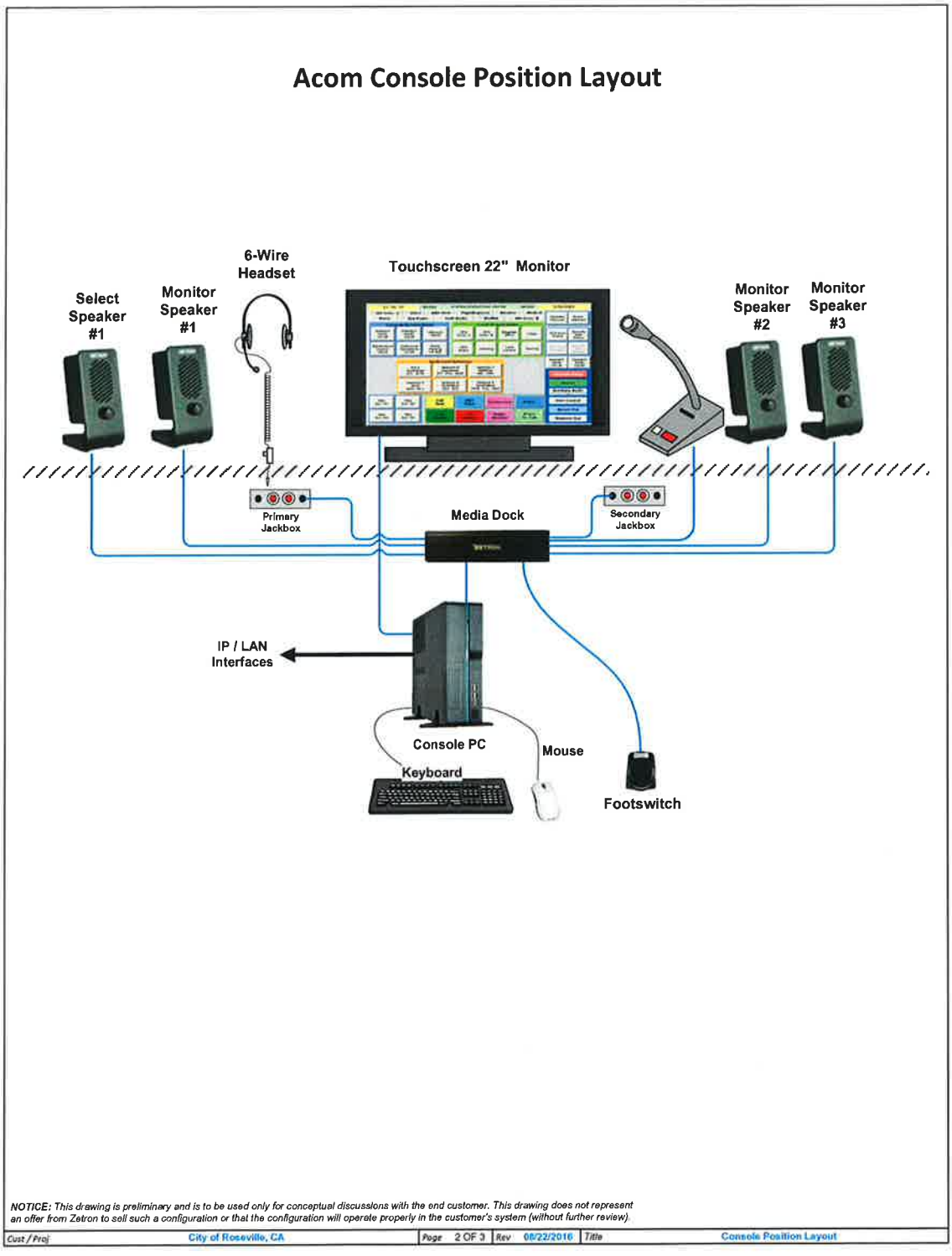
- Media Controller Servers (MCS) and applicable software, which provides console management, control and supports up to 25 x console connections.
- Infrastructure Gateway (IG) servers and applicable software, which supports twenty (20) CSSI talkpaths.
- Licenses for AES Encryption at each console.
- AcomNOVUS Surveyor Network Management System (NMS) server for system configuration and operational monitoring and reporting.
- Thirty (30) conventional radio channel control station interfaces supported by fifteen (15) Acom Radio Gateways.
- Five (5) Acom Radio Gateways to interface with up to ten (10) EF Johnson VM600 control stations (control stations to be supplied, installed, configured and maintained by EFJohnson).
- One (1) Acom Pathway DFSI Gateway to interface to a DFSI base station/repeater (base station/repeater to be supplied, installed, configured and maintained by Roseville).
- Seventy-one (71) SIP logging recorder outputs supported by AcomNOVUS Media Controller (MCS) Server.
- One (1) week console integration and Interoperability testing at EFJohnson headquarters.

System Diagrams are shown on the following pages.

System Drawings:

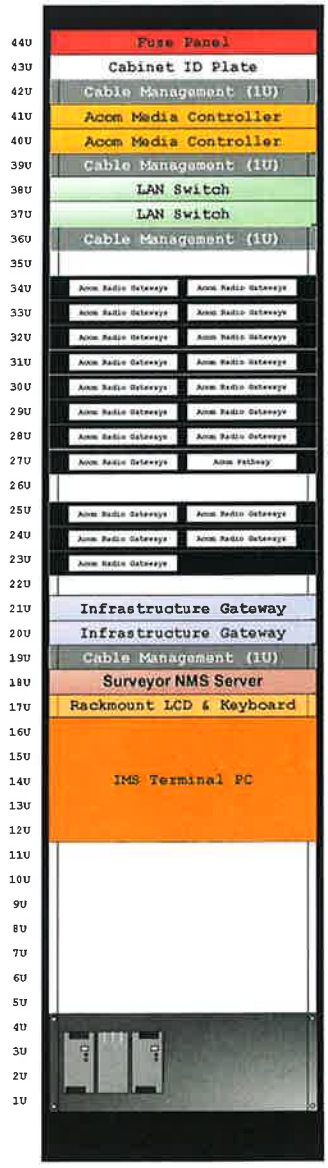


Console Position Layout



Backroom Equipment

City of Roseville, CA Cabinet Elevation



MCS-1M & 1S
Console Control Servers
10 x console Interfaces
71 X SIP Logger Interfaces

LAN-1M
Redundant Acom LANS

ARGs For Conventional Resources
30 X Conventional Radio Interfaces

Pathway DFSI Gateway
1 X DFSI Control Station Interface

ARGs For EFJ Control Stations
10 X EFJ Control Station Interfaces

IG-1M & 1S
Redundant Infrastructure Gateways
20 X CSSI Talkpaths

IMS Server-1M
Information Management Server

Power supply
Redundant 12VDC Power System - Up to 20 devices

CABINET 1

NOTICE: This drawing is preliminary and is to be used only for conceptual discussions with the end customer. This drawing does not represent an offer from Zetron to sell such a configuration or that the configuration will operate properly in the customer's system (without further review).

Cust / Proj	City of Roseville, CA	Page	3 OF 3	Rev	08/22/2016	Title	Back Office Hardware

AcomNOVUS General Overview

Introduction to AcomNOVUS

The Acom Advanced Communications NOVUS system is a digital end to end IP solution that represents the best value, next generation console dispatch technology for mission-critical applications. AcomNOVUS sophisticated digital architecture integrates voice (radio and telephone), I/O and data, to provide unmatched flexibility and ease of use when it comes to resource management, all combined on a scalable server platform core.

Running on top of industry standard IP networks, the AcomNOVUS system can provide interfaces and control to both locally connected, as well as geographically remote resources. Using ultra reliable Commercial-Off-The-Shelf (COTS) server technologies running off of a Linux operating environment, the AcomNOVUS system provides a scalable solution for small to large dispatching needs. In mission-critical settings, AcomNOVUS can be configured for local and geographic redundancy, guaranteeing the highest levels of system availability and reliability. AcomNOVUS is the ideal solution for primary dispatch facilities, consolidating dispatch facilities, creating back-up or remote dispatch capabilities and interfacing to new and legacy communications systems.

The AcomNOVUS console system can scale efficiently from a single to hundreds of dispatch positions either centrally located or distributed over multiple communication centers. With AcomNOVUS, communication centers located in different geographical areas can be networked to provide distributed switching and wide area control for improved efficiency, greater operational effectiveness, and maximum security and reliability.

AcomNOVUS Windows®-based consoles are highly configurable and offer intuitive, easy-to-use interfaces that can be easily tailored to provide mission-specific functionality.

AcomNOVUS guarantees exceptional performance, superior network connectivity, and cost-effective evolution to satisfy the requirements of dispatch communication centers today and into the future. AcomNOVUS systems are intended to provide communication capabilities for mission-critical dispatching worldwide, including public safety, aviation, utilities, railway and highway command headquarters, military/defense command centers, and maritime communications centers.

A. AcomNOVUS Technology

The key elements of the AcomNOVUS technology are grouped into four main categories:

Switching Infrastructure

These are the components that manage the transport, routing, and interfacing of all communications resources.

User Interface

The AcomNOVUS Console Software (ACS) provides operators access to system resources. The AcomNOVUS System Manager (ASM) is used for system configuration, diagnostics, and maintenance.

Network Architecture

The IP transport structure that allows multiple locations, and their resources to be networked using T1/E1, optical fiber, microwave, or other link technologies over IP.

System Architecture

The building blocks that are used to create an AcomNOVUS dispatch console system, including the Media Controller Server (MCS), AcomNOVUS Console positions, the Zetron Infrastructure Gateway (IG) and any number of other resource interface gateways, operating on a wide range of industry standard interfaces and protocols.

Console Positions

The AcomNOVUS Console Software (ACS) gives operators access to system resources. Connections from the ACS to the MCS are provided though Ethernet links between the console and MCS server. For redundancy multiple connections can be provided to both a primary and backup MCS servers.

System Resource Interfaces

Connections to the different resources, voice (radio and telephone), I/O and data, available to the system is accomplished differently depending on the type of interface available from a resource. Modern digital technologies such as P25, DMR and SIP that already utilize IP are connected to the AcomNOVUS system through IP connections via switches or routers. Legacy non-IP resources are converted to IP through AcomNOVUS interface gateways. Once converted the information between the resource and the AcomNOVUS consoles use the same IP transport as digital resources. Specialized AcomNOVUS gateway applications provide communication and control between the AcomNOVUS system and its resources.

B. AcomNOVUS General Functions

AcomNOVUS dispatch communications systems provide a wide range of capabilities, including:

- Radio dispatch
- Call taking
- PABX access
- PSTN access
- VoIP
- Hotlines, intercom, and public address
- Trunked radio interfaces and protocols
- Network (LAN/WAN) interfaces and protocols
- Patching and conferencing
- Automatic call distribution (ACD)
- Embedded HTML/PDF browser
- Paging
- Selective calling (SELCAL)
- Interactive voice response (IVR)
- Recorded voice announcement (RVA)
- Instant recall recorder (IRR)
- Closed-circuit television (CCTV) via web streaming
- Simple network management protocol (SNMP)
- XML CAD interface
- Alarm monitoring
- Channel monitoring

- Voice logging
- Remote control and management
- Efficient integration of radio, telephony and other communication resources
- Advanced digital conferencing scenarios available for radio and telephone

C. Customized Configurations

Each AcomNOVUS system is uniquely tailored for each customer. While a range of "off-the-shelf" functionality and hardware modules are used, the architecture is very flexible and permits extensive, yet cost-effective customization.

D. Compatible with Diverse Radio and Telephony Standards

A powerful range of interfaces to third party equipment and systems provides the foundation for building a highly integrated and resilient system. Solutions combining mobile radio (Conventional, DMR, Tetra, P25 (CSSI, DFSI), iDEN, SmartNet/SmartZone, NEXEDGE OpenSky), telephony (SIP, E1, T1, ISDN PRI, CAS, PABX, PSTN and specialized telephony interfaces) can be integrated with AcomNOVUS.

E. Operator Workload Optimized

With the AcomNOVUS technology the different control functions of a complex, multi-channel communications system are presented in a uniform, convenient, and intuitive manner to ensure maximum operator efficiency and effectiveness. Human interface characteristics are optimized to reduce operator workload and provide functions specific to a user's functional domain.

- PC-based operator positions provide full-color, graphical presentation of commands and controls that are familiar, precise, and easy to use.

- Features and parameters are fully user-programmable to allow customization, modifications, and changes by appropriate personnel.

- Functions are controlled by touch screen and a standard mouse or trackball. A full range of peripherals assist the operator in handling multiple sources of inputs and outputs.

F. Scalable and Upgradeable

The AcomNOVUS Advanced Communication System is an integrated family built on a foundation of COTS hardware and software modules that combine to deliver cost-effective, scalable solutions for both voice and data networks. Specialized hardware and software provide cost effective methods of interfacing into non-digital radio and telephone resources. This modular architecture allows for economical system expansion while software designs allow for enhancement and simplified migration to incorporate future capabilities.

G. Capable of Reconfiguration and Maintenance

AcomNOVUS allows fast and safe reconfiguration to permit any operator to undertake any role. Support systems are available to provide on-line diagnostics and efficient reconfiguration management.

System Architecture

The flexibility, expandability, and scalability of the AcomNOVUS system architecture are among its greatest strengths. AcomNOVUS systems are created from the core building blocks of its technologies to provide virtually any system capacity, functionality, and configuration required. In addition to the Media Controller

core, these building blocks include the AcomNOVUS Console Position, Resource Gateways, and the interfaces and protocols that allow AcomNOVUS to communicate with a wide range of communications devices and systems.

A. Media Controller Server (MCS)

The AcomNOVUS Advanced Communications System is first and foremost an integrated digital platform that allows operators access to voice and data circuits in the system (subject of course to administrative control).

The Media Controller Server is the building block of the AcomNOVUS platform. Its primary function is to manage and control the connections between console positions and resources available to the system in an efficient and information rich manner. The MCS operates on commercially available servers. Depending on operational needs the MCS can provide redundant fault tolerant configurations for mission critical operation. These servers can be sized based on system console loading requirements, such as the number of consoles in the system, and user reliability and availability needs. IP connections are established to consoles and resource gateways. Software applications within the server perform management of connections, building and management of call paths, and management and configuration of the server itself

The software applications operating in a typical controller include:

Console Communications

The console communication software manages the communication and features of connected AcomNOVUS consoles. When operating in fault tolerant redundant configurations, the application in separate servers, communicates with the primary and secondary Ethernet connections to the console.

Resource Communications

The console resource communication software manages and controls communication with resources connected to the console. It is responsible for maintaining link synchronization with resource gateways and controlling when a requested resource is routed to a console position.

Media Controller Function

The Media Controllers are also responsible for building and binding communication paths between consoles and resources. This binding may also occur when inter-console communication occurs between dispatchers. The MCS builds links when requested and handles any arbitration that may occur.

System Management

System management handles the configuration and management of the MCS. This is accomplished via an external web browser operating on an external client PC. The MCS contains its own internal web server that facilities this communication.

B. Infrastructure Gateways (IG)

Infrastructure Gateways manage external resources and allow the protocols and interfaces used by these devices to be converted to the common AcomNOVUS communication and control protocol. Depending on the resource type, the gateway may operate on a server platform or it may utilize more customized hardware designed to connect to a specific resource type. Multiple interface types can be supported on an IG, provided server loading and processing limits are followed.

P25 Console SubSystem Interface (CSSI)

Communication with Project 25 (P25) trunked system is accomplished through the industry standard P25 CSSI interface. The CSSI gateway operates on server hardware. The AcomNOVUS solution implements the CSSI per applicable P25 standards that allow radio systems from various vendors to interface with the AcomNOVUS console system. The specification provides for different voice communication call types, the ability for the dispatcher to control radios, and both clear (unencrypted) and secure (encrypted) communication between radio users and the AcomNOVUS system.

Secure Project 25 Communications

The AcomNOVUS system supports both AES and DES P25 encryption standards

C. AcomNOVUS Radio Gateways (ARG)

The AcomNOVUS Radio Gateway (ARG) is used to connect radio resources to the MCS through an IP network. They convert audio and control data into IP packets and vice versa, enabling the data to pass back and forth between the radios and dispatcher positions. Each AcomNOVUS Radio Gateway manages up to two channels.

When an ARG data path travels across a Wide Area Network (WAN) the IP packets are managed by Radio Portal servers. These servers allow ARG data to travel across multiple LANs via a WAN.

Radio Interfaces

- Project 25 (CSSI, DFSI)
- Conventional
- DMR
- NEXEDGE
- iDEN
- MPT1327
- OpenSky
- Tetra
- SmartNet/SmartZone
- EDACS

Signaling Protocols

- Tone remote control
- VoIP
- SELCAL
- Paging
- DTMF
- VOX detect
- MDC600
- MDC1200
- GStar

Paging Protocols

- Quick Call I
- Quick Call II
- MDC1200 Selective Call
- Trunking Call Alert
- Dual-tone Multi-frequency (DTMF) using (FSK-NRZ)

Telephony Protocols

- SIP
- E1/T1 CAS
- 2-and 4-wire E&M
- E1/T1 ISDN PRI
- POTS
- E1 QSIG

Data Protocols

- Ethernet
- RS232/422/485
- NTP

A. AcomNOVUS Console Position

AcomNOVUS console workstations are used by dispatch operators, call takers, and/or supervisors to provide direct communications, patching, conferencing, signaling (e.g. paging), and messaging to the field resources under their command and control.

Each AcomNOVUS workstation consists of a Windows based personal computer equipped with a flat panel LED or LCD monitor and various control devices such as keyboard, mouse, and trackball. Monitors may be fitted with capacitive touchscreen technology that ensures problem free operation for the life of the monitor and allows the console to be operated without the need for mouse or trackball. The console has two modes of operation to which it can be configured, using the AcomNOVUS Console Design Software. In the more traditional mode the console has a device known as the Media Dock connected via a USB interface. The Media Dock provides connectivity for all peripheral devices that allow the dispatch operator to effectively interact with the field resources.

These devices include

- Up to two jackboxes and associated headsets, wired or wireless, with or without PTT
- Up to four (4) purpose built mission critical Zetron speakers, one (1) for Select audio and the remaining for Monitored audio. Each speaker is rated to 5W with a ruggedized design that includes a volume control and voice activation LED. Up to eight (8) speakers can be connected to a console position with the addition of a second Media Dock.
- Footswitch
- Local I/O that can be used to activate functions on the console or can be used to drive lamp towers at the console desk to indicate the status of the operator.
- Local Telephone port to allow a desk phone from any parallel telephony system to utilize the same headset.
- Auxiliary Audio I/O to allow a local or remote input or output
- Instant Recall Recorder (IRR) capability

In conjunction with the Media Dock and configured with the Console Configuration Tool, audio-routing scripts based on open-standard XML provide custom audio-routing capabilities unique to each AcomNOVUS deployment. The system places the audio routing into a scripting engine that allows custom audio-routing profiles to be loaded dynamically into the Media Dock. As a result, any audio input can be directed to any audio output or have audio levels automatically adjusted based on the operator's console selections. This

means each deployment's audio switching requirements can be met through system configuration rather than hard coding.

Remote Console Positions

By removing the Media Dock from a position, a console can be operated in a more mobile fashion. This mode allows a console to be operated on either a laptop or tablet. Typical applications of this configuration could be deployment in mobile command or temporary dispatch operations. This configuration only offers a single audio routing option, due to the removal of the media dock. A remote console can be made functional by providing an IP connection and a USB connected headset or using a laptops build-in speakers and microphone. A console operating in this environment will still provide the user with the full console feature set the system has to offer.

Figure 1 Remote AcomNOVUS Tablet Console Position

Supervisor Console Positions

AcomNOVUS provides advanced functionality that, although can be implemented at any console, are usually reserved for use by shift leads or supervisors. These features include:

- Acknowledging system alarms

  Clicking an alarm button displays an Alarm Log window, which shows information about active alarms. If an alarm is active it can be acknowledged by performing an Alarm Acknowledgement. This action does not clear the alarm, it merely lets the system know that someone is aware that the alarm is active so it can be processed and resolved.

- Intruding on an operator's call

  Intruding on a console allows the supervisor to coach the console operator while listening in to their calls. The intruded console and the intruding console can communicate openly, the intruding (supervisor) console can hear all of the console operator's calls but cannot be heard by any of them.

- Overriding an operator's PTT

This feature enables a PTT from the supervisor's console to override an operators' PTT. This allows the supervisors to interrupt calls and take control of a channel.

- Radio Disable

  This feature allows a console operator to stun or revive a mobile radio from a console position.

AcomNOVUS Console Configurations Overview

AcomNOVUS provides user flexibility in how console positions are used and configured. AcomNOVUS provides three different dispatch position configurations intended to address user needs. The configuration provided full feature operation, mobility, and advanced dispatcher capabilities. These positions are:

Console Position Type	Position Capabilities
Feature Mode Console Positions	This is a console position built on a COTS PC platform with Zetron provided interface and audio processing equipment. A feature mode console provides the full range of features and functionality to dispatch operators
Remote Console Position	A remote console position is an AcomNOVUS console running on a laptop or tablet computer. It can reside almost anywhere providing an IP network connection can be established between the mobile console and the AcomNOVUS core network. A mobile console position does not require the Zetron specific audio and interface hardware. It can be operated with a simple USB Microphone / Headset. Because no external hardware is required the console is limited to only two speakers
Supervisor Position	A supervisor position provides additional capabilities not found in a Feature Mode or Remote console position. These extra features are provided through software programming. Accessing supervisor features is provided to user having proper permission levels at login. Because these capabilities are provided by software any position can be used as a supervisor position based on proper user permissions.

Dynamic Resource Management

AcomNOVUS gives dispatchers dynamic control over the radio and telephone resources that appear on their screen. Through a simple drag-and-drop procedure or by selecting a button, dispatchers can add or remove telephone and radio resources to or from their screens as the situation demands. As a result, consoles can be modified quickly and easily in response to unexpected incidents, emergencies and dispatchers' changing needs.

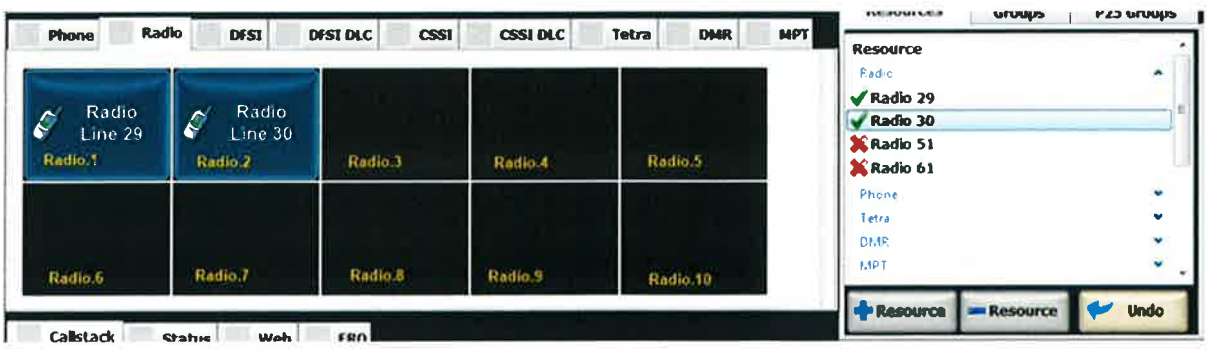


Figure 2 AcomNOVUS Console Screen Resource Button Example

The AcomNOVUS Console Software provides operators with a wide range of programmable functions, such as:

- Radio and telephone queues with priority queuing
- Call history display
- Patching and conferencing
- Channel Select
- Working groups
- Answer next
- Hold
- Dial
- Memory (Speed) Dial
- Last number redial (LNR)
- Transfer
- Call Forward
- Conference
- Mute
- Clear
- Transmit (PTT)
- Transmit All
- Instant Transmit
- Automatic calling and streaming video display though HTML hyperlinks
- HTML pages for document display
- SELCAL
- Fully programmable paging
- Full duplex direct and addressable intercom
- Audio level controls
- Control of auxiliary relays (doors, alarms, etc.)
- Utility Audio (TV, commercial radio, etc.)
- Configuration management

AcomNOVUS Call Stacks

Call Stacks are interactive lists of calls which are filtered, sorted, and color coded based on specified criteria. They can be created to manage radio, intercom, and phone calls. It is a filtered view of the global call system in the AcomNOVUS switch that records all phone, radio, and intercom activity. Interacting with a Call Stack can be done with a mouse or dedicated fiction buttons. Call Stacks are updated automatically showing activity and status of assigned calls.

Through Call Stacks you can you can answer, acknowledge, end, or initiate call back to a radio unit or phone number associated with the call. Data calls can also be documented and acknowledged through the Call Stack. The Call Stack serves as an interactive record of sent and received console calls.

The call stack can be configured to display only information deemed important to users about a call. Information displayed can be labeled according to a user's preference. The presentation of information is based on configurable parameters:

- Filter: used to specify which calls should be displayed in a stack
- Sort: calls can be sorted by information in any Call Stack data column
- Color Display: information can be color coded based on a calls attribute status
- Sound: Sounds can be generated to notify an operator, regarding a calls status. The sound can be generated once at an interval

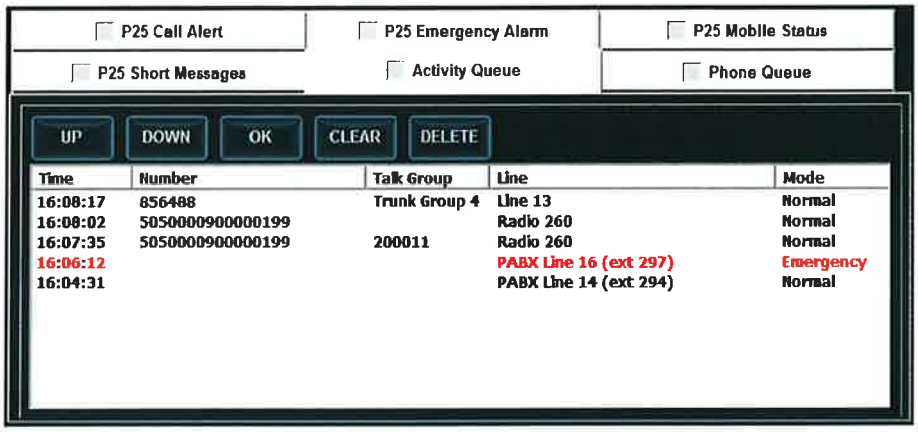


Figure 3 Call Manager Call Stacks Overview

AcomNOVUS Information Management System - Surveyor

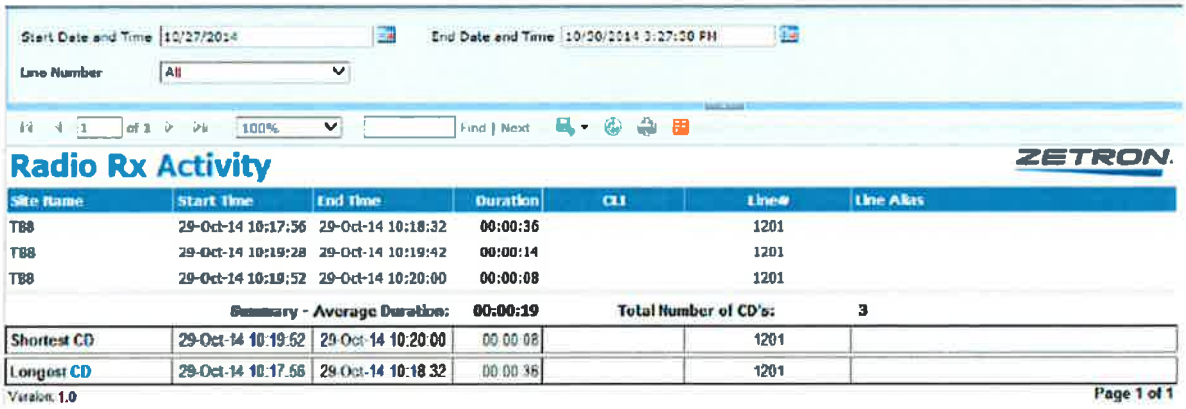
Surveyors logs alarms, operator events, and call detail records into a database and provides real-time views in addition to an extensible reporting engine to review the data. Surveyor is a Windows service that collects event data from the AcomNOVUS over IP communications, and stores the collected alarm and MIS data into a SQL Server database. Surveyor hosts a web configuration page for managing the connections as well as accessing web reports.

Surveyor is connects into the AcomNOVUS system, over the IP network, through this interface it collects fault data and call detail data as they occur. Multiple collection points can be provided. This provides redundancy to continue collecting data in the case of a system fault.

When redundant collection points are in place, events are collected simultaneously and duplicates are discarded. Surveyor processes the data and writes records to a SQL Server database. MS SQL Server has a rich feature-set beyond Surveyor that IT groups may appreciate. The database can be queried to generate reports based on user-specified parameters. The database may be on the same machine as Surveyor or another that can be reached via IP. Data base management can be an automated process to prevent filling the hard drive. Ad-hoc purges may also be performed from the Surveyor web interface.

Beyond the real-time alarm and console status, Surveyor provides some reports for querying long term system activity. Reports are written in the Report Definition Language, an open format for defining the presentation of report data. A suite of reports are included in the Surveyor installation, and further user-created reports could be added using the MSRS Business Intelligence tools and MS Reporting Services web tool provided with MS SQL Server.

Surveyor can reach out to other AcomNOVUS data sources to collect META data to be used with the reports. AcomNOVUS Profile Manager and AcomNOVUS Entity Manager alias data is used, if available, to enhance the reports. With monitoring of these external data sources, new reports will always have the most current aliasing META data.



Start Date and Time 10/27/2014 End Date and Time 10/30/2014 3:27:30 PM

Line Number All

1 of 1 100% Find | Next

Radio Rx Activity

ZETRON.

Site Name	Start Time	End Time	Duration	CLI	Line#	Line Alias
TB8	29-Oct-14 10:17:56	29-Oct-14 10:18:32	00:00:36		1201	
TB8	29-Oct-14 10:19:28	29-Oct-14 10:19:42	00:00:14		1201	
TB8	29-Oct-14 10:19:52	29-Oct-14 10:20:00	00:00:08		1201	
		Summary - Average Duration:	00:00:19	Total Number of CD's:		3
Shortest CD	29-Oct-14 10:19:52	29-Oct-14 10:20:00	00:00:08		1201	
Longest CD	29-Oct-14 10:17:56	29-Oct-14 10:18:32	00:00:36		1201	

Version 1.0 Page 1 of 1

Figure 4 Surveyor Call Activity Report

User Profile Management

With AcomNOVUS profile-based log-ins, administrators can configure the system to display particular functions, allow access or provide certain screen layouts according to user's profile. Log-in capabilities range from basic-user screen startup to full, authenticated log-in control.

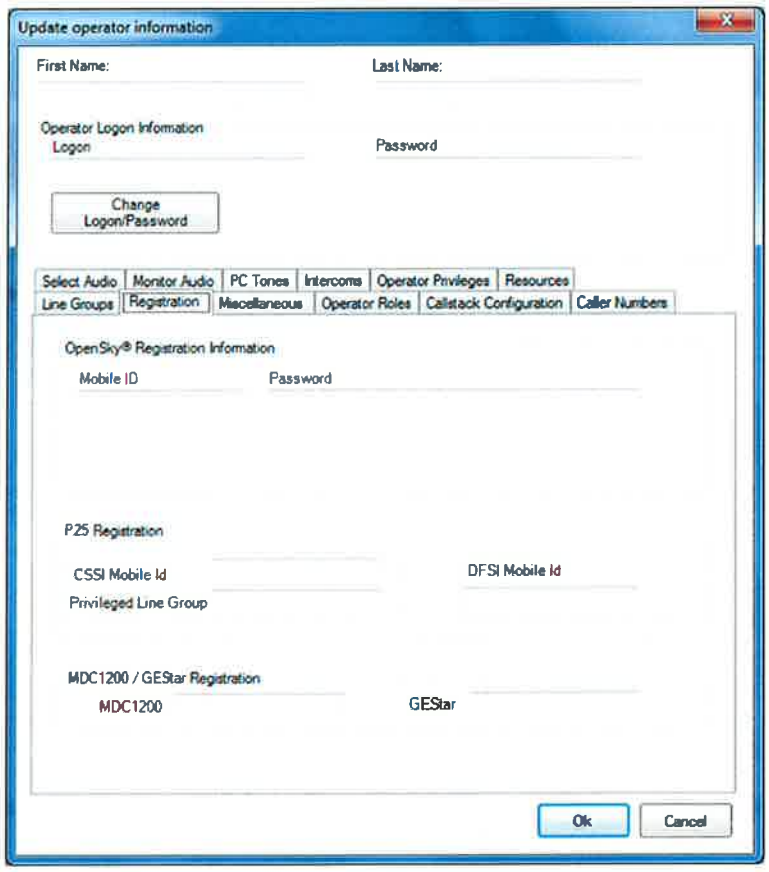


Figure 5 User Profile Management Window

Any number of screen configurations can be created and assigned to any position. For example, configurations can be created based on resource needs, dispatch functions to be performed, duty shifts, scenario management, supervisory and maintenance roles, and training exercise simulations. "Location-based resource" configurations can be created using icons overlaying graphical bitmaps to indicate the locations of communications resources such as radios and telephones in the customer's network. Configurations can be assigned to an operator automatically depending on his or her log-on profile, they can be modified "on the fly" as circumstances warrant (with appropriate authorization), and they can be created, published, and activated by supervisory personnel using network management resources.

AcomNOVUS User Interface

The AcomNOVUS Console Software (ACS) application adopts an "any function, any size, any resource, any appearance, any location" paradigm for designing and configuring a console interface screen. Figure 6 provides an example screen configuration utilizing a traditional "button" based configuration.

Figure 6 Example of a "Button" Based AcomNOVUS ACS to transition from a Motorola Centracom Gold Elite

Figure 7 is an example of an embedded browser in the dispatch screen which allows an operator to reference HTML or PDF based documentation such as first-aid information, map images, web-cams, manuals, maintenance logs or standard operating procedures. The information presented by these HTML or PDF files can be developed by the customer to match existing procedures and documentation. If the files created have hyperlinks, the operator can browse these at the console position while answering calls, transmitting on radio channels, or releasing access doors. The great advantage to having this information available in an online format is that it can be centrally updated such that all operators are working from the most current information resources. If the hyperlinks are for a telephone directory and the number is stored, the operator can click the hyperlink and generate an outgoing telephone call using an outbound trunk group.

These files can be centrally held on a closed LAN network, or stored directly on the console PC. The AcomNOVUS system consoles can be integrated with PCs running multiple applications such as CAD, passenger information display systems, other PC based applications, or can be run on a standalone PC.

Figure 7 Example of an Embedded HTML or PDF Browser in the AcomNOVUS Operator Screen

Figure 8 shows an application using either text lists, or just free form text on a console tab within the ACS operator screen. This allows operators to not have to use notes stuck to the console or post-it notes for supplemental information. Again this information can then be centrally updated such that all operators are working from the most current information resources.

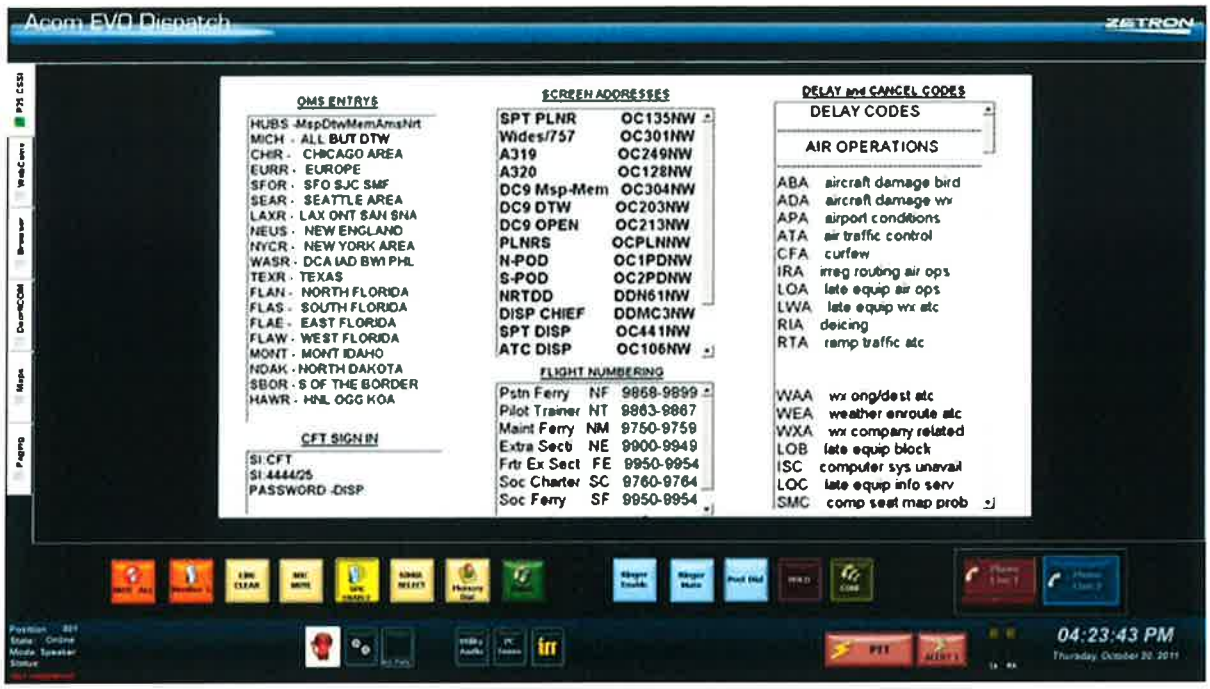


Figure 8 Example of Text Lists or Free Form Text in the AcomNOVUS Operator Screen

Figure 9 shows an example of a "location-based resource" screen configuration that can be created using icons overlaying graphical bitmaps to indicate locations of communication resources such as radios and telephones in the customer radio network, such that a dispatcher could select the location of a communications resource rather than just a labeled icon. Configurations can be assigned to an operator automatically depending on his or her log-on profile.

Figure 9 Example of Map Based AcomNOVUS ACS for Resource Location

Figure 10 is an example of a "location-based resource" screen configuration that can be created using icons overlaying graphical bitmaps to indicate other AcomNOVUS console positions for intercom. This is a standard feature of the AcomNOVUS Communication System.

Figure 10 Example of Graphic Based AcomNOVUS Operator Screen for Intercom Communication

Figure 11 is an example of a screen configuration that allows dispatchers to instantly view multiple time zones directly from the operator screen. These time zones can be displayed either on colored panels on any or multiple tabs, or graphically on a service coverage map.

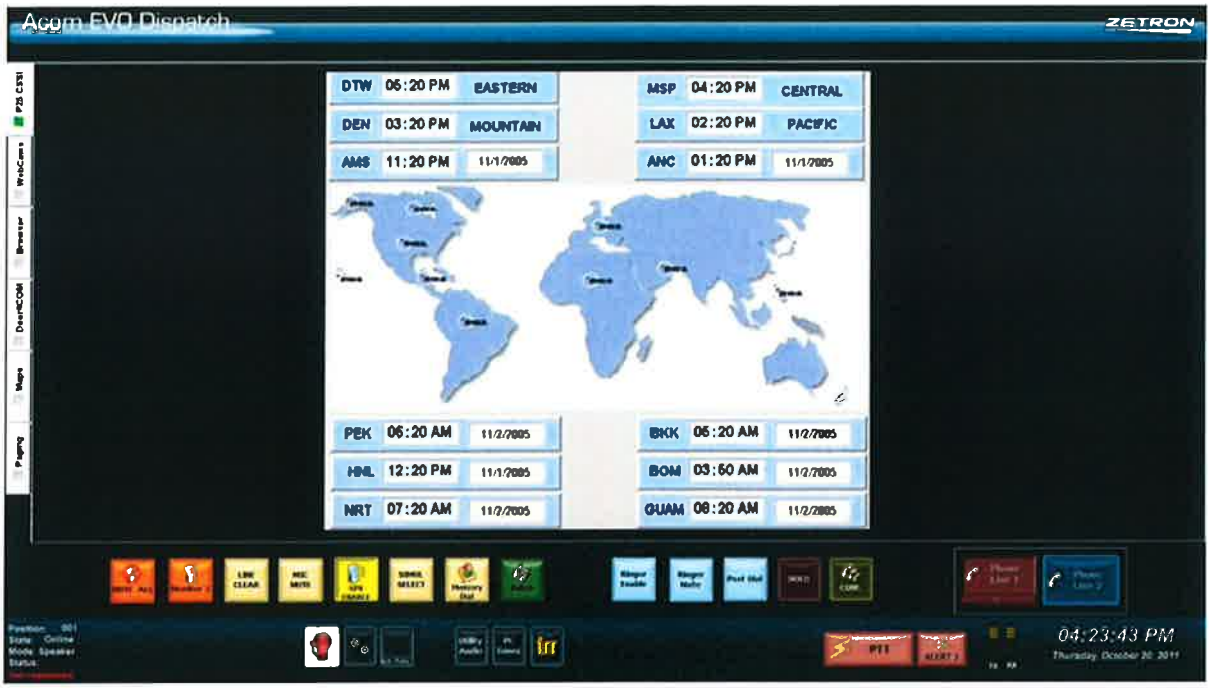


Figure 11 Example of multiple time-zone feature within the AcomNOVUS Operator Screen

AcomNOVUS Console Design Software (CDS)

The AcomNOVUS Console user interface allows for flexible design and configuration of console interface screens. "Drag and drop" design tools are used to create the console screens and to assign system resources to buttons and other screen elements.

AcomNOVUS screen configurations are created using AcomNOVUS Console Design Software (CDS), a Windows-based application that provides all of the graphical design tools and editing functions needed to fashion user interfaces for the AcomNOVUS Console Screen. CDS provides a simple, highly intuitive interface that allows screen configurations to be created and edited quickly. Through CDS, AcomNOVUS provides a wide range of functionality and capabilities, with screen layouts that provide icons/keys for accessing all communication resources, function controls, calling queues, information display areas, and user databases (e.g., telephone directories, one-touch dialing and pre-programmed paging lists, alarm logs, etc.). Screens can be configured with a variety of user tools such as list boxes, resource-based graphics, tabbed windows, and browsers.

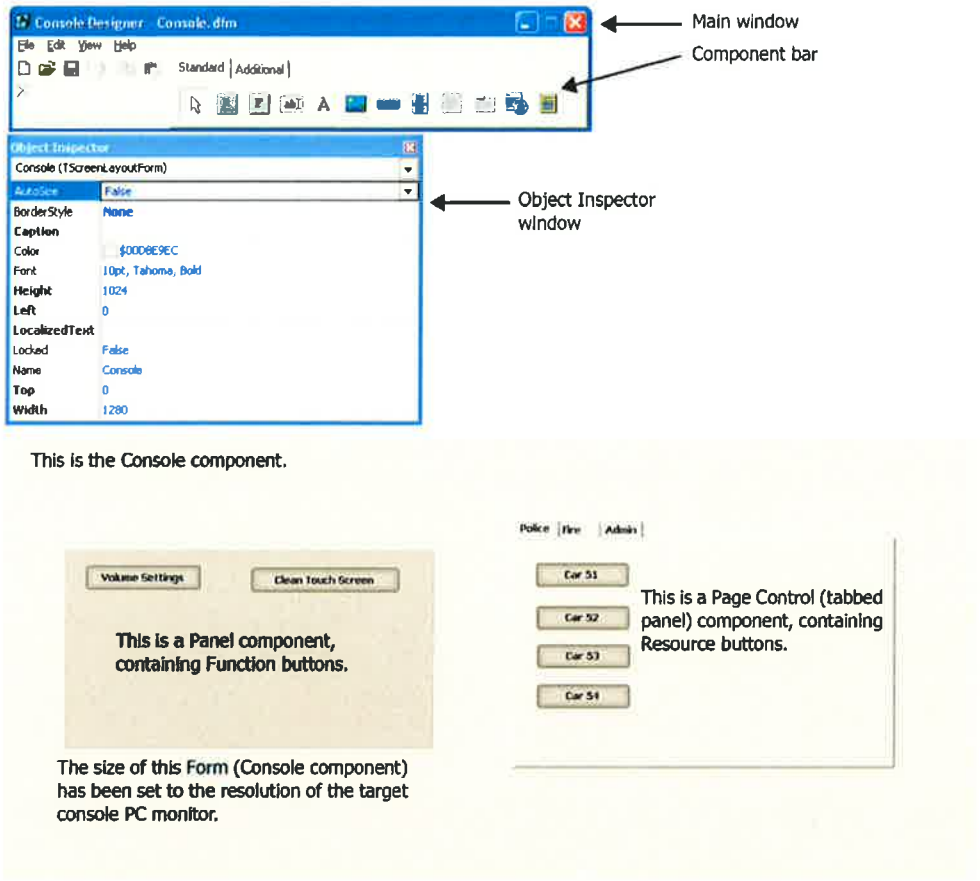


Figure 12 CDS Designer Example

AcomNOVUS Management Tools

The AcomNOVUS Console Manager application offers a built in IP diagnostics tool to determine if the connected IP network is running as expected.

Figure 13 AcomNOVUS Management Application Diagnostic Tools

Integrated alarm and reporting management tools can be configured to either link to external contacts or provide a Simple Network Management Protocol (SNMP) trap. This greatly simplifies system error diagnosis and system maintenance.

The AcomNOVUS solution also has a comprehensive data storage and reporting package known as Surveyor, that collects call and alarm messages from the system and allows a variety of web based reports to be generated quickly and easily. This helps managers monitor the system and dispatcher performance and helps detect and diagnose potential issues.

These built-in IP-diagnostic tools and system-management capabilities help keep the AcomNOVUS system running optimally for the life of the system.

SCHEDULE E

DELIVERY / PAYMENT SCHEDULE

MILESTONE	Date	Contract Dollars	Contract Payment %
Receipt of Purchase Order		$ 63,218.11	10%
Delivery of Preliminary Design Review (PDR)		$158,045.26	25%
Completion of Factory Acceptance Test (FAT)		$252,872.41	40%
Completion of Site Acceptance Test (SAT)		$158,045.26	25%
Supply and Installation of Zetron Communications System, and Training (not a milestone)		$632,181.04 (subtotal)	
5-year Gold Maintenance Service Plan (not a milestone)		$253,740.06	
		$885,921.10 Contract Price	

1. Any delay caused by Customer will result in a day for day delay in the due date of all subsequent milestones.
2. The delivery schedule is subject to change by mutual agreement of the parties.
3. All dollars in this table are expressed as U.S. Dollars and are based on a total contract value equal to the Contract Price set forth above.
4. Each annual installment of the Gold Maintenance Service Plan fee is due to Zetron prior to the beginning of each 12-month service plan.

1st year	included	4th year	$50,345.25
2nd year	$50,345.25	5th year	$50,345.25
3rd year	$50,345.25	6th year	$52,359.06

5. Taxes, as applicable, are included in the above amounts.
6. Payment is due net 30 days.
7. Failure to make timely payment may cause delay in delivery of any subsequent delivery milestones.
8. If Customer delays 15 consecutive days or more, payment becomes due for the applicable milestone.

SCHEDULE E-1

MAY 22, 2017 COST PROPOSAL

ZETRON, INC.

Response to City of Roseville, CA
Response for Proposals
800MHz Radio System Replacement

TAB G: Cost Proposal

May 22, 2017

ZETRON 12034 134th Ct. NE | Redmond, WA 98052 | (p) 425.820.6363 | (f) 425.820.7031 | www.zetron.com

City of Roseville RFP Pricing Workbook

Dispatch Console **Proposer:** **Zetron, Inc.**

Section 1: Dispatch Console Mandatory Items

Item #	Description	Unit List Price	Discount %	Unit Sales Price	Quantity	Extended
1	Console: Common Equipment	$ 124,265.00	15%	$ 105,625.25	1	$ 105,625.25
2	Console: Server Equipment	$ 35,800.00	15%	$ 59,200.00	1	$ 59,200.00
3	Console: Network LAN/WAN Equipment	$ 7,600.00	15%	$ 6,460.00	1	$ 6,460.00
4	Console: Dispatch Position	$ 18,950.00	15%	$ 16,107.50	10	$ 161,075.00
5	Console: 6-wire Headset	$ 285.00	15%	$ 242.25	20	$ 4,845.00
6	Console: Instant Recall Recorder (INCLUDED)	$ -	0%	$ -	10	$ -
7	Console: Implementation Costs	$ 89,220.00	15%	$ 75,837.00	1	$ 75,837.00
8	Console: Programming Equipment	$ 8,325.00	15%	$ 7,076.25	1	$ 7,076.25
9	Console: Spare Equipment (Lot)	$ 34,674.00	15%	$ 29,472.90	1	$ 29,472.90
10	Option: Console Touch Screen (per console)	$ 695.00	15%	$ 590.75	10	$ 5,907.50
11	Option: Desk Microphone (per console)	$ 595.00	15%	$ 505.75	10	$ 5,057.50
12	Option: AES Encryption (per console)	$ 2,100.00	15%	$ 1,785.00	10	$ 17,850.00
13	Option: CAD Interface	$ 10,500.00	15%	$ 8,925.00	1	$ 8,925.00
14	Option: Software Application-based Console (NO HARDWARE INCLUDED)	$ 6,300.00	15%	$ 5,355.00	3	$ 16,065.00
15	Option: Console integration and Interoperability testing at P25 radio vendor facility (assume North America location for 1 week testing)	$ 28,500.00	15%	$ 24,225.00	1	$ 24,225.00
16	Gold Maintenance Service Plan Year 1	$ 39,937.00	0%	$ 39,937.00	1	$ 39,937.00
17	Decommissioning of existing console system and delivery to Roseville nominated location	$ 22,740.00	0%	$ 22,740.00	1	$ 22,740.00
18	Addition of 5 x Acorn Radio Gateways (ARG) at single location, 19" rack mount kits, configuration/test.	$ 24,250.00	0%	$ 24,250.00	1	$ 24,250.00
					Extended Total (excluding Sales Tax)	**$ 614,548.40**
					Sales Tax (7.25% of Taxable Items)	**$ 29,650.28**
					Extended Total (including Sales Tax)	**$ 644,198.68**

Section 2: Optional Items

Item #	Description	Unit List Price	Discount %	Unit Sales Price	Quantity	Extended
1	Option: Console Touch Screen (per console)	$ 695.00	15%	$ 590.75	0	$ -
2	Option: Desk Microphone (per console)	$ 595.00	15%	$ 505.75	0	$ -
3	Option: AES Encryption (per console)	$ 2,100.00	15%	$ 1,785.00	0	$ -
4	Option: CAD Interface	$ 10,500.00	15%	$ 8,925.00	0	$ -
5	Option: Software Application-based Console (NO HARDWARE INCLUDED)	$ 6,300.00	15%	$ 5,355.00	0	$ -
6	Option: CSSI Interface and Implementation (Price for 5 ADDITIONAL P25 CSSI talkpaths. 20 x P25 CSSI talkpaths are included in system)	$ 10,500.00	15%	$ 8,925.00	0	$ -
7	Option: Console integration and Interoperability testing at P25 radio vendor facility (assume North America location for 1 week testing)	$ 28,500.00	15%	$ 24,225.00	0	$ -

Section 3: Training

Item #	Description	Unit List Price	Discount %	Unit Sales Price	Quantity	Extended
1	Console System Management Training (Training provided for 3 Roseville and 3 Silke Support Staff)	$ 3,925.00	15%	$ 3,336.25	1	$ 3,336.25
2	Console System Maintenance Training (Training provided for 3 Roseville and 3 Silke Support Staff)	$ 7,395.00	15%	$ 6,285.75	1	$ 6,285.75
3	Dispatch Console Operator Training (1 week of 8 classes total)	$ 3,950.00	15%	$ 3,357.50	3	$ 10,072.50

Section 4: Maintenance and Support Services

Item #	Description	Price for 1st Maintenance Year	Price for 2nd Maintenance Year	Price for 3rd Maintenance Year	Price for 4th Maintenance Year	Price for 5th Maintenance Year
5	Gold Maintenance Service Plan	included.	$ 52,995.00	$ 52,995.00	$ 52,995.00	$ 52,995.00

Item #	Description	Price for 6th Maintenance Year
5	Gold Maintenance Service Plan	$ 55,114.80

City of Roseville RFP Pricing Workbook

Dispatch Console

Proposer: Zetron, Inc.

Pricing Summary:	**Total (excl. Tax)**
Section 1: Dispatch Console Mandatory Items	$ 614,548.40
Section 2: Options	$ -
Section 3: Training	$ 19,694.50
Sales Tax (7.25% of Taxable Items)	$ 29,650.28
System (Capital Expense) Total:	$ 663,893.18
5% JVCKENWOOD Discount	$ (31,712.15)
System (Capital Expense) Total:	**$ 632,181.04**

Extended Support & Maintenance are extended to the City of Roseville at the price of $253,740.06 (including 5% JVCKENWOOD discount) and will be invoiced and paid annually prior to the beginning of each year's support per the following schedule:

- Year 1: Included (Warranty)	$ -
- Year 2:	$ 50,345.25
- Year 3:	$ 50,345.25
- Year 4:	$ 50,345.25
- Year 5:	$ 50,345.25
- Year 6:	$ 52,359.06
Support & Maintenance (Operational Expense) Total:	**$ 253,740.06**

SCHEDULE F

ACCEPTANCE TESTS

The **Factory Acceptance Test (FAT)** procedure is prepared by a Zetron project engineer. The FAT focuses on the functionality of the Zetron Communications System in a controlled environment excluding any items that must be tested at Customer's site such as live circuitry, third party interfaces, etc. The Zetron project engineer uses a checklist to determine pass-fail test results. Upon completion of the test, which takes place at Zetron's location, the test results are reviewed to determine whether the Zetron Communications System performs and is manufactured in accordance with Zetron's specifications and this Contract and is ready for shipment. Customer's attendance during the FAT is optional. If Customer is in attendance, Customer signs off on the FAT checklist prior to shipment as does the Zetron project engineer and Zetron project manager. Customer also signs the Certificate of Delivery – Factory Acceptance Test (FAT) in person or if not in attendance, upon receipt. Zetron's project manager also signs the certificate. In the event that the FAT identifies area(s) of nonconforming performance that do not materially affect the operation of the Zetron Communications System, Customer shall agree to Provisional Acceptance and Zetron shall promptly remedy such nonconformance on a mutually agreed schedule. The certificate has space to list exceptions, i.e., issues that Zetron will resolve. Once the issues are resolved, only the related portion of the system is retested. The current form of certificate is attached. Once certificate is signed, Zetron is authorized to invoice Customer for the FAT milestone.

The **Site Acceptance Test (SAT)** procedure is prepared by a Zetron project engineer. The SAT focuses on the Zetron Communications System in its operational environment, testing the installation (all wires), all hardware (consoles, radio interfaces, telephone interfaces, etc.), and software, replicating what was tested in the factory as well as testing those items that could not be tested there. After the Zetron Communications System is installed at Customer's site, the SAT is conducted by a Zetron project engineer or a Zetron customer support engineer to verify that the Zetron Communications System performs and is manufactured in accordance with Zetron's specifications and this Contract. The engineer uses a checklist that lists the steps to be taken to test the system. Customer, either through a lead technician or other suitably qualified representative, is required to be present for the SAT. Customer's representative signs off on the SAT checklist as does a Zetron engineer and Zetron project manager. Upon completion of the SAT, the Customer also signs the Certificate of Delivery – System Acceptance Test (SAT) either onsite or promptly after receipt. Zetron's project manager also signs the certificate. In the event that the SAT identifies area(s) of nonconforming performance that do not materially affect the operation of the Zetron Communications System, Customer shall agree to Provisional Acceptance and Zetron shall promptly remedy such nonconformance on a mutually agreed schedule. The certificate has space to list exceptions, i.e., issues that Zetron will resolve. Zetron will discuss these issues with Customer to establish an action plan. Once the issues are resolved, only the related portion of the system is retested. The current form of certificate is attached. The signed certificate constitutes final acceptance and beneficial use of the Zetron Communications System by Customer. Once certificate is signed, Zetron is authorized to invoice Customer for the SAT milestone. The Warranty Period starts on the date the SAT is completed.

CERTIFICATE OF DELIVERY
Factory Acceptance Test (FAT)

Customer Name: (Customer Name) **("Customer")**

Project Name: (Project Name)

Project Number: (Project Number)

Delivery Of FAT-

Customer agrees that the following item(s) was provided by Zetron, Inc., and acknowledges successful completion of the FAT. All items noted in the factory acceptance item description document provided are complete and are accepted.

Zetron, Inc. is hereby authorized to invoice Customer for the Factory Acceptance Test (FAT) milestone. Customer agrees to pay the invoice as described in the contract between Zetron and Customer.

1 **Factory Acceptance Test**

The FAT is complete and accepted, with exception of the following minor deliverables (none unless otherwise listed below) that must be completed prior to the Site Acceptance Test (SAT).

1

2

3

4

5

Customer's Authorized Representative:	Zetron Representative:
Print Full Name:	Print Full Name:
Title:	Title: **Project Manager**
Signature:	Signature:
Date:	Date:

CERTIFICATE OF DELIVERY

Site Acceptance Test (SAT)

Customer Name: (Customer Name) **("Customer")**

Project Name: (Project Name)

Project Number: (Project Number)

Date SAT Completed: (Date)

Delivery Of SAT-

Customer agrees that the following item(s) was provided by Zetron, Inc., and acknowledges successful completion of the SAT. All items noted in the site acceptance item description document provided are complete, optimized, and the Zetron Communications System is accepted and ready for beneficial use by Customer. The Warranty Period begins on the date the SAT was completed.

Zetron, Inc. is hereby authorized to invoice Customer for the Site Acceptance Test (SAT) milestone. Customer agrees to pay the invoice as described in the contract between Zetron and Customer.

1 **Site Acceptance Test**

The SAT is complete and accepted, with exception of the following minor deliverables (none unless otherwise listed below) that must be completed according to a mutually agreed schedule.

1

2

3

4

5

Customer's Authorized Representative:	Zetron Representative:
Print Full Name:	Print Full Name:
Title:	Title: **Project Manager**
Signature:	Signature:
Date:	Date:

SCHEDULE G

CHANGE ORDER FORM

Change Order

Project Name:

Contract Number:

Change Order Number:

Vendor: Zetron, Inc.
PO Box 97004
Redmond, WA 98073-9704
Attn: Contract Fulfillment Dept. / Project Manager

The contract between Zetron, Inc. and (Customer) ("Customer") dated _____ shall be changed as follows:

1.
2.

EXCEPT AS PROVIDED IN THIS CHANGE ORDER, ALL OTHER TERMS AND CONDITIONS IN THE ABOVE REFERENCED CONTRACT REMAIN IN FULL FORCE AND EFFECT.

Additional time for this change: _____ Revised Completion Date: _____

Original Contract:	$_____
Previously Approved Change Orders:	$_____
Current Contract Amount:	$_____
Previously submitted and pending Orders	$_____
This Change Order Amount:	$_____

Zetron, Inc.
Authorized Signatory: _____ **Date:** _____

Printed Name: _____ **Title:** _____

Customer
Authorized Signatory: _____ **Date:** _____

Printed Name: _____ **Title:** _____

SCHEDULE H

LABOR AND MATERIALS PAYMENT BOND