RMS Attachment 6 - Support Plan Niche Response

Note: This RMS Attachment 6, Support Plan provides the response provided as part of the Contractor's technical proposal for the New York State Police Records Management System project used as the benchmark to establish this Aggregate Agreement. The Contractor, Niche Technology Inc, and the Products offered under this Aggregate Agreement are required to adhere to the functionality contained in this response. An Authorized User should review the functionality described by the Contractor in this Attachment and should use this information as a baseline for the Statement of Work. Authorized Users should also determine if any changes are necessary to meet the specific project requirements when working with the Contractor to develop the Authorized User Agreement. Please see Attachment D, How to Use the Aggregate Agreement 18-02, for additional information when working with the Contractor to develop the Authorized User Agreement.

Contractor's Name: Niche Technology Inc.

Requirement Type - Support Plan

Instructions:

- For each requirement contained within this document a response is required.
- If additional space is needed the Contractor should clearly label their response with the requirement identifier.
- NYS reserves the right to allow the Contractor to correct obvious errors of omission.
- Responses should take in to consideration the assumptions/context provided below.

Assumptions/Context

End users will report problems with the RMS system to New York State's ITS Service Desk (NYS Service Desk).

1. NYS Service Desk will attempt to determine if the problem is related to the NYS infrastructure, user error, or due to issues with the RMS.
2. If the NYS Service Desk determines there is an issue with the RMS, or if they are unable to determine the source of the problem, NYS second level support personnel will be contacted
3. If the second level support personnel cannot resolve the problem, they will contact the Contractors support team via telephone and high priority email.
4. The Contractor takes the lead on problem resolution as soon as NYS reports the problem to the Contractor support team.
5. The Contractor will report the date, time and description of the remedy to the NYS second level support as soon as practical following the resolution of the problem(s).
6. The Contractor will be active in any root cause analysis activities.

The Contractor shall provide a support plan addressing in detail each of the following aspects of system support:

Rqmt No.	System Problem Management Requirement
SR1	The Contractor shall provide support plan details which: a) Define the roles and responsibilities of both the Contractor and NYS entities, related to the support and maintenance of the proposed solution 24/7/365. b) Describe its solution's system alerts, monitoring and management tools (indicating if these tools are COTS or customized) that would be available to NYS. E.g. Tivoli, NMON, Splunk Inc, etc. c) Include an outline of proposed diagnostic procedures, facilities and tools or utilities available to NYS support staff for the analysis of software problems. d) Describe their documentation of historical problems and resolutions. e) Provide a chart of their entire support organization that includes all support tiers and staffing levels. E.g. Help Desk, application support, Database Administration, etc. f) Describe their status reporting capabilities for ongoing incidents. g) Provide their communication strategy to periodically report support-related statistics, e.g., trouble calls, system health and Contractor support performance metrics. h) Include escalation procedures and guidelines for NYS support staff to follow for contacting Contractor if problems are not resolved in a timely manner.
	Niche Technology response: see our response material immediately following this table.

a) Define the roles and responsibilities of both the Contractor and NYS entities, related to the support and maintenance of the proposed solution 24/7/365.

Niche 24/7/365 Support Model

Niche understands and is very familiar with the cooperative support model described in the Assumptions/Context section above, as it is the most common for our customers. The Niche support team is set-up specifically to provide a second-level, rapid response to our customer's technical team 24/7/365 in order to ensure timely resolution of unforeseen issues. The Niche team is used to working in the mission-critical environment side-by-side with our customer's technical teams. As part of the project onboarding, the Niche support team will be trained and familiar with the NYS environment, so that they can be highly responsive to support calls. Once a problem is reported to Niche, the Niche support team will take the lead in troubleshooting through resolution, always working closely with the NYS technical team.

The Niche support team can be reached 24x7 via using Niche's Critical support procedure. The first step is a telephone call to the Niche support line. The call is answered during daytime hours and forwarded to a pager during off hours. If paged, the 24/7 on-call person will be paged automatically and will return the phone call within 10 minutes.

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Support calls are documented in the Niche ticket system where status, times and key notes on progress and resolution are recorded. At the conclusion of each trouble report, Niche will provide a root cause analysis and any recommendations. Recent support tickets are reviewed routinely between the Niche Project Manager and NYS as part of ongoing quality assurance and service management in order to identify any issues with support quality and/or resolution time.

NicheRMS Support Team Roles and Responsibilities

Niche Technology support team roles and responsibilities

Customer Support Manager	Acts as liaison between Niche and Niche customers to make sure customer concerns are being met in a timely fashion and is an escalation point for the customer for issues that are not resolved satisfactorily. The Niche Customer Support Manager maintains a long-term relationship with customers, both during and after the project, and also works with Niche User Groups and sub-groups.
Niche Project Manager	Post-implementation, the Niche Project Manager continues working with NYS to coordinate support, including the monitoring of critical support issues and their resolution. This ensures continuity of knowledge. The Niche project manager is responsible for ensuring that all of NYS support needs are met. They ensure the proper staffing of the Niche team and are accountable to the NYS for Niche support performance. They will review open and recently closed support tickets on a regular with the NYS team to ensure compliance with service level agreements and to identify trends and/or opportunities for improvement.
Niche Support Engineers	Responsible for monitoring and responding to telephone calls and the support pager, triaging the issue, reviewing supporting documentation and requesting additional information from the customer as needed. Documenting the correspondence in the Niche ticket tracking system. The Niche personnel in this position have: • Computer Science degree. • 15+ years of experience with Niche Technology. • Support Engineer for all current projects.

NYS Support Team Roles and Responsibilities

These are the key roles for NYS' support team:

Police project team – recommended support team roles

NYS NicheRMS Manager	Acts as the general single point of contact for NicheRMS issues.
NYS Service Desk	• End users report problems with the RMS system to New York State's ITS Service Desk (NYS Service Desk). • Triages incoming support requests • Build a support knowledge base

	• Determine if the problem is related to the NYS infrastructure, user error, or due to issues with the RMS.
NYS Second level support team	• If the NYS Service Desk determines there is an issue with the RMS, or if they are unable to determine the source of the problem, NYS second level support personnel will be contacted • If the second level support personnel cannot resolve the problem, they will contact the Contractors support team via telephone and high priority email. Includes NYS RMS Subject Matter Experts who understand NicheRMS business process and are functional experts in the new system. These personnel are part of the NYS second level support team and help resolve system issues. • Should include: Records and Statistical Business Expert, Investigation Business Expert, Custody Business Expert, and Case Business Expert
NYS NicheRMS system Administrator	This NYS resource: • Monitor / configure servers, workstations and other interfaced systems. • Design and run reports as needed. • Maintain and upgrade all system configuration and forms. • Install software upgrades. • Monitor databases and troubleshoot system problems. • Provide knowledge base for system and interface information to aid end users.
NYS Technical/ Systems Support	This person is a liaison between the support team and the agency IT staff, and guides IT integration, network configuration, firewall, and security, *etc.* according to agency policies.

b) Describe its solution's system alerts, monitoring and management tools (indicating if these tools are COTS or customized) that would be available to NYS. E.g. Tivoli, NMON, Splunk Inc, etc.

Niche System Alerts, Monitoring and Management Tools

The NicheRMS production system is monitored by NYS. Niche provides knowledge transfer and on-boarding to the NYS support staff so that they are fully capable of and comfortable with monitoring the NicheRMS production environment. This is the standard support procedure for NicheRMS and is common across the industry.

NicheRMS is monitored using Windows Performance and Alert Service Perfmon. This provides comprehensive system monitoring, alerting and easy integration into existing system administration and monitoring processes. This allows NYS to keep track of key performance metrics such as number of user connections, transaction volume, and the average response time, including specialized counters that track the NDS-level and database-level contributions to the overall response time. The information produced by these tools is also used by the Niche support team to troubleshoot and resolve issues.

For the NicheRMS production environment, the Windows Performance Logs and Alerts service is configured to monitor specific parameters and generate alarms when their range is outside of desirable values. Niche has an extensive list of parameters that should be monitored in a

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production environment and will work closely with the NYS support team to determine the most appropriate and specific system monitoring and alert settings.
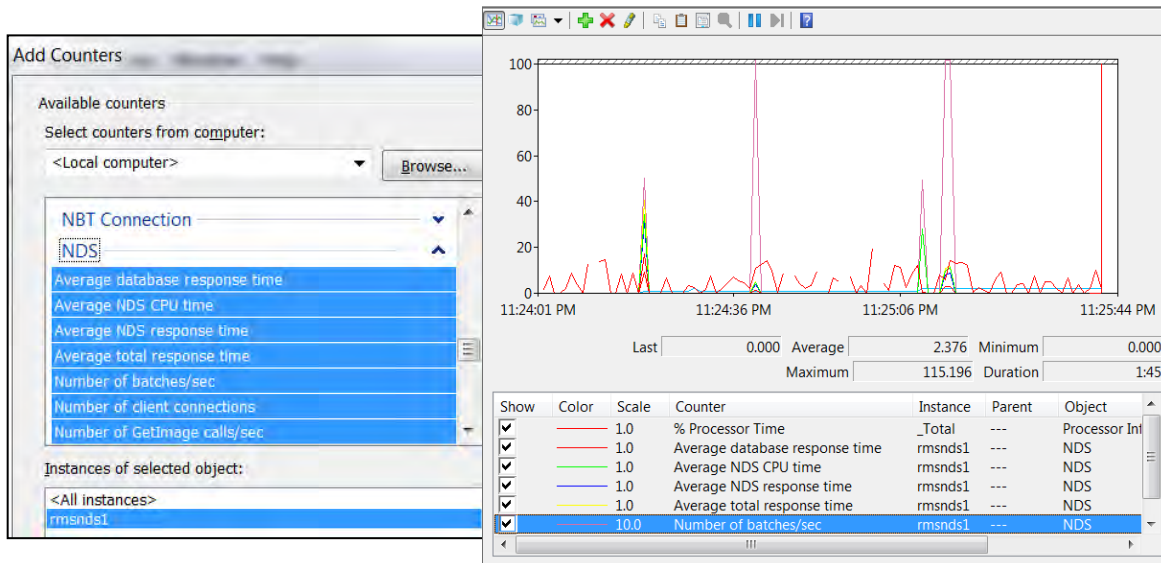
Connection volume for end user NDS instances; typical business day (M-F 0800-1600)

	Approx. # of connections	Notes
(green)	< 400	• Sufficient capacity to absorb additional users without memory pressure and stability effects • Most load balanced NDS installations can afford to lose at least one NDS without affecting overall system stability
(yellow)	400 - 600	• Plan to deploy additional NDS instances • Losing a server could result in the remaining NDS instances experiencing instability effects due to an increase in user connections/memory consumption
(red)	600 <	• Short term action required to make additional NDS instances available • Increased risk of instability effects due to lack of memory available to NDS.exe

Niche provides additional tools and guidance for detailed analysis of the system and its constituent parts, including:

- Application layer capture and analysis of user operations, including aggregate analysis by operation type.

- Capture and analysis of long-running database queries, including aggregate analysis by operation type.

- Database-level wait stats analysis and block/lock analysis.

- Guidance regarding capture of application state using procdump, windbg, and related debugging tools, and how to configure the tools to capture unusual application behavior.

We advise customers to run the data collection aspects of most monitoring tools continuously, so that unusual events are captured as they happen instead of waiting for recurrence. Regular analysis of monitoring data can point out trends in system performance that can be corrected before they affect users.

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Continuing beyond the application itself, there needs to be monitoring of secondary services across the data centers. This includes monitoring of AlwaysOn replica/mirrored database health, replication health, SAN/storage array-level performance, VMware-level hypervisor performance, *etc.* These metrics can be monitored through Microsoft-provided tools or management views, or you may use third-party tools to monitor these infrastructure components if you prefer. The key is to ensure that these system components are, in fact, being monitored according to best practices and that the resulting data is being assessed.

Statistical reporting of system performance

Perfmon logging and diagnostic log analysis can be used to track system performance over time. This information can form the base of any service reporting process. The report generation process can be automated and integrated with other police agency reporting processes. It is also possible to develop a simple interface application that uses the mechanisms that feed the Perfmon counters directly and extract the data into third-party reporting products. Other means of integrating with customer reporting are also possible.

Performance characteristics

NicheRMS incorporates extensive load and performance monitoring features to allow both real time monitoring (via Windows Perfmon) and detailed analysis from logs. Because NicheRMS is in production use in a number of large installations (8,000+ officers), where performance monitoring and analysis is critical, Niche provides a well-developed set of features and tools for monitoring performance characteristics, summarized here:

1. The NicheRMS application servers (NDS) publish a number of counters for use with Microsoft's Performance Logs and Events service. Perfmon can be used to simultaneously monitor the real time performance of both Windows and the NDS servers, including CPU use, memory use, network use (Windows), number of connections, request rate, average database, NDS and total response time (NDS), etc. as well as Windows and SQL Server counters on the database servers. Perfmon provides an interactive indication of system performance, a history (if recording is turned on) and alerts if an out-of-spec condition is encountered. For more information on Niche's Perfmon integration, see below.

2. The NDS audit logs and diagnostic logs record the time used by the various components of the system in servicing each client request. Niche provides post-processing analysis tools to classify request types and graph the various performance trends over time. Niche also has analysis tools that can determine which operations in the system are slow and which are expensive (cost = resources used x execution frequency), allowing performance tuning efforts to be focused on the appropriate operations.

3. Niche provides locking/blocking, wait stats, and other SQL Server monitoring processes that record information needed to detect and analyze database concurrency issues.

4. SQL Server traces are used to find long running queries to help diagnose performance problems.

System performance

NicheRMS is designed for 24/7/365 operation. While our contractual service level agreements (SLA's) typically required 99.7% availability, our actual customer reported uptime is higher. Niche customers average 2,467 sworn officers in size and place an urgent call for support once

every 3.7 years on average. From Queensland Police: "Our production database size is 8TB…we've had no downtime attributable to NicheRMS software problems in over a decade".

One of the reasons we are able to maintain such a high-standard for uptime is that NicheRMS does not require any outages for routine maintenance. Major software upgrades do require periods of degraded system performance or downtime, but the operational impact can be minimized through proper planning and preparation. Planned major system upgrades typically are performed no more than [once] per year and take no more than [one] hour to complete. In most cases read-only access to the system is provided during major system upgrades in order to mitigate any officer safety issues by providing officers with most of the information that they would have had access to under normal circumstances, although officer efficiency is still affected.

Resilient system design

NicheRMS is a 24/7 high availability system, frequently reported by IT managers to be among the most reliable of all systems that they run. When set up and configured as advised by Niche, there are no single points of hardware failure, and the system is resilient enough to maintain the required system response time and uptime regardless of cause of the failure. The system detects and recovers from failures with no human intervention, making after-hours emergency service calls rare.

Hardware redundancy

All computer hardware can fail unexpectedly. Typical repair time is 4 – 24 hours, which is not acceptable for any critical operational system. NicheRMS uses the following features to avoid downtime due to hardware failures:

- Database servers are configured in a cluster. If the primary server fails, the secondary database server takes over the NicheRMS database instance from the primary server.
- The database is stored on redundant (RAID) disks, typically on a SAN shared by the machines in the database server cluster.
- Niche Data Server (NDS) software is designed to tolerate a database server failover. If network connections to the database server are lost, NDS attempts to reconnect and re-run any transactions that were aborted. This retry, combined with the automatic SQL Server database failover and recovery, assures that no work is lost during a failover. The only noticeable effect is that the system pauses while the failover occurs.
- The NDS servers themselves are load balanced, providing both load sharing and redundancy in case of an NDS server hardware failure.
- Any part of the system can be run in a virtual environment, providing an additional option for automatic recovery from hardware failures.

High software reliability

It is important that the system software operate reliably, particularly the server software, which simultaneously handles hundreds of users. The NicheRMS NDS application server software has been designed for continuous operation. Specifically, NDS has the following features:

- Sophisticated "smart pointer" memory management to prevent memory leaks that cause software failure after long periods of operation.

- Robust internal exception handling that aborts individual operations without affecting the operation of the server software as a whole. These exceptions deal with user, data and programming errors.
- Special memory management for large in-memory objects. It avoids memory heap fragmentation, which can lead to exhaustion of memory resources after long periods of operation.
- Automated regression testing to catch server programming errors prior to release.
- Detailed server logging, which allows most server errors to be detected, diagnosed and corrected from log files without reproducing the error or waiting for it to recur.

Additionally, Niche uses source code control procedures that allow Niche developers to determine which customers are affected by any bug found in the system, either by Niche or by a customer, and to develop any necessary patches for all customers.

Concurrent access

NicheRMS is designed to support large numbers of users accessing the system simultaneously. The system allows multiple users concurrent access to the same records, *i.e.*, more than one person can access the same record at the same time. To support this, NicheRMS provides multi-function database records that can be updated by multiple users concurrently. Multiple users can work in the same logical NicheRMS record simultaneously without interfering with one another, because each high-level record consists of multiple lower-level entities that can be independently edited.

The overall application-level locking model is optimistic, *i.e.*, first in wins. The system avoids long-term record locking by using short transactions and application-level mechanisms to drive users to specific sections of interest, rather than using an overt "checking out" of in-use records.

This is facilitated by the NicheRMS tasking system, which allows specific items of work to be assigned to each team member. While some work will need to be completed in a sequence, other work can take place simultaneously. This means that different personnel can work on the same high-level record at the same time. For example, one officer can open the record to add Log entries at the same time that a member of a Records unit is checking the links to involved persons, vehicles and addresses.

Concurrence control is provided at the level of individual reports that may be attached to a database record, for example, an individual Supplementary report attached to an Incident record. For an individual report, only one user can have the report open at a time. Access is restricted to the user who created the report and to that user's supervisor(s).

In addition, the system is configured with Modify and Delete Grace Periods (MGP and DGP) that cause reports to become locked against further modification or deletion after a defined period of time, for all users except system administrators.

Finally, the system can detect editing conflicts when handling binary records, such as large narrative reports. In these cases, the user is warned that the report has been modified since the last time they retrieved the report from the database, and they are offered an opportunity to save their local changes so they can resolve the differences.

At the RDBMS level, NicheRMS uses the default SQL Server read committed (pessimistic) isolation level, using isolation level overrides and specific locking directives as required to achieve appropriate levels of performance and data consistency

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Disaster recovery

NicheRMS supports a remote disaster recovery (DR) site in the following ways:

- The DR site can be maintained as a "warm standby" site using SQL Server log shipping or asynchronous database mirroring. Use of asynchronous processes for maintaining the DR site data means that failover to the DR site should be manually triggered. This is normally acceptable as failover to DR is either deliberate (*e.g.*, to allow hardware or network maintenance at the primary site) or results from a catastrophic (and rare) event.
- The DR site can potentially be maintained using synchronous database mirroring, which could allow instantaneous automatic failover. However, this configuration requires some NicheRMS development and requires substantial evaluation and testing because it can have a significant performance impact.
- The DR site can be maintained as a "cold standby" site using SAN mirroring. Failover could be automatic using tools external to NicheRMS, but is more likely to be manual.
- Network resiliency is the responsibility of the police agency.

c) Include an outline of proposed diagnostic procedures, facilities and tools or utilities available to NYS support staff for the analysis of software problems.

Niche Diagnostic Procedures and Facilities for Problem Analysis

The NicheRMS production system is monitored by NYS. Niche provides knowledge transfer and on-boarding to the NYS support staff so that they are fully capable of and comfortable with monitoring the NicheRMS production environment. This is the standard support procedure for NicheRMS and is common across the industry.

As described above, NicheRMS is monitored using Windows Performance and Alert Service Perfmon which provides comprehensive system monitoring, alerting and easy integration into existing system administration and monitoring processes.

This allows NYS to keep track of key performance metrics such as number of user connections, transaction volume, and the average response time, including specialized counters that track the NDS-level and database-level contributions to the overall response time. The information produced by these tools is also used by the Niche support team to troubleshoot and resolve issues.

Niche provides additional tools and guidance that NYS can use for detailed analysis of the system and its constituent parts, including:

- Application layer capture and analysis of user operations, including aggregate analysis by operation type.
- Capture and analysis of long-running database queries, including aggregate analysis by operation type.
- Database-level wait stats analysis and block/lock analysis.
- Guidance regarding capture of application state using procdump, windbg, and related debugging tools, and how to configure the tools to capture unusual application behavior.

NYS can perform periodic, regular analysis of monitoring data can point out trends in system performance that can be corrected before they affect users.

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NYS can monitor secondary services across the data centers. This includes monitoring of AlwaysOn replica/mirrored database health, replication health, SAN/storage array-level performance, VMware-level hypervisor performance, *etc.* These metrics can be monitored through Microsoft-provided tools or management views, or you may use third-party tools to monitor these infrastructure components if you prefer.

Windows Perfmon integration is part of SQL Server and Windows. Niche also provides Perfmon integration for NDS, allowing all aspects of system operation to be recorded and analyzed through a single tool. The monitoring applies to the application server layer and the database server layer, and to all aspects of each component, such as processor time, memory use, network-related metrics, storage performance, and layer-specific counters such as those produced by SQL Server and NDS.

The NDS application server publishes performance counters for consumption by Microsoft's Perfmon tool and Performance Logs and Alerts service. Examples include:

- Number of users logged in
- Transactions per second
- Average total response time (defined below)

Microsoft Windows and SQL Server also provide a large number of Perfmon counters, allowing all aspects of system operation to be monitored simultaneously, including CPU load, disk I/O, network traffic, memory use, SQL Server buffer use, SQL Server cache use, *etc.*

Niche provides documentation and other forms of guidance regarding the above monitoring; it covers both the application layer and database layer, and addresses NicheRMS-specific counters and those published by Windows and SQL Server. For example, we provide a Windows Performance Monitoring manual that specifies healthy ranges of values for average total response time, application server CPU use, database server CPU use, SQL Server page life expectancy, transaction log I/O read latency, and so on. Niche has arrived at these values through extensive experience in the monitoring, as well as in the tuning of large NicheRMS implementations, and they are subject to ongoing assessment and revision.

d) Describe their documentation of historical problems and resolutions.

All trouble reports are recorded in the Niche ticket tracking system. For no-critical production change requests and problems, Niche provides ticket tracking for handling all customer requests.
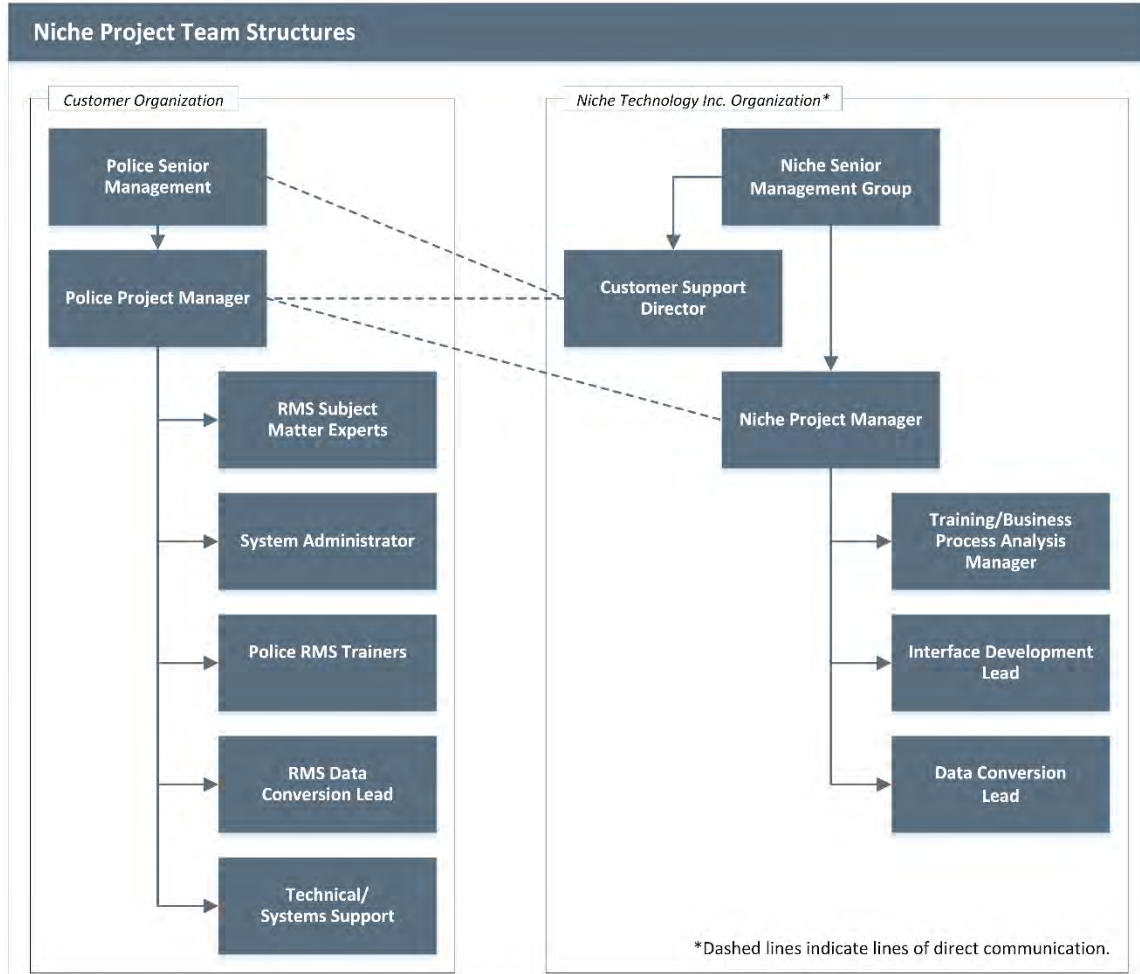
- All work to be performed is broken down into a series of tickets, each of which is assigned a unique reference number.

- The tickets range from small application improvements and bug fixes to large customer-specific configuration changes and enhancements.

- The tickets are prioritized by the customer based on their business impact, the customer's scheduling requirements and the availability of the most suitable Niche development staff person for each job.

- Niche provides customers with regular reports as to the status of their reported tickets.

Niche maintains a history of all issue reports. The details of the issue and its resolutions can be reviewed at any time.

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e) Provide a chart of their entire support organization that includes all support tiers and staffing levels. E.g. Help Desk, application support, Database Administration, etc.

Niche Technology Support organization Chart

See the tables following the organization chart for details of the various roles.

NicheRMS Support Team Roles and Responsibilities

Niche Technology support team roles and responsibilities

Customer Support Manager	Acts as liaison between Niche and Niche customers to make sure customer concerns are being met in a timely fashion and is an escalation point for the customer for issues that are not resolved satisfactorily. The Niche Customer Support Manager maintains a long-term relationship with customers, both during and after the project, and also works with Niche User Groups and sub-groups.
Niche Project Manager	Post-implementation, the Niche Project Manager continues working with NYS to coordinate support, including the monitoring of critical support issues and their resolution. This ensures continuity of knowledge. The Niche project manager is responsible for ensuring that all of NYS support needs are met. They ensure the proper

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	staffing of the Niche team and are accountable to the NYS for Niche support performance. They will review open and recently closed support tickets on a regular with the NYS team to ensure compliance with service level agreements and to identify trends and/or opportunities for improvement.
Niche Support Engineers	Responsible for monitoring and responding to telephone calls and the support pager, triaging the issue, reviewing supporting documentation and requesting additional information from the customer as needed. Documenting the correspondence in the Niche ticket tracking system. The Niche personnel in this position have: • Computer Science degree. • 15+ years of experience with Niche Technology. • Support Engineer for all current projects.

NYS Support Team Roles and Responsibilities

These are the key roles for NYS' support team:

Police project team – recommended support team roles

NYS NicheRMS Manager	Acts as the general single point of contact for NicheRMS issues.
NYS Service Desk	• End users report problems with the RMS system to New York State's ITS Service Desk (NYS Service Desk). • Triages incoming support requests • Build a support knowledge base • Determine if the problem is related to the NYS infrastructure, user error, or due to issues with the RMS.
NYS Second level support team	• If the NYS Service Desk determines there is an issue with the RMS, or if they are unable to determine the source of the problem, NYS second level support personnel will be contacted • If the second level support personnel cannot resolve the problem, they will contact the Contractors support team via telephone and high priority email. Includes NYS RMS Subject Matter Experts who understand NicheRMS business process and are functional experts in the new system. These personnel are part of the NYS second level support team and help resolve system issues. • Should include: Records and Statistical Business Expert, Investigation Business Expert, Custody Business Expert, and Case Business Expert
NYS NicheRMS system Administrator	This NYS resource: • Monitor / configure servers, workstations and other interfaced systems. • Design and run reports as needed. • Maintain and upgrade all system configuration and forms.

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	• Install software upgrades.
	• Monitor databases and troubleshoot system problems.
	• Provide knowledge base for system and interface information to aid end users.
NYS Technical/ Systems Support	This person is a liaison between the support team and the agency IT staff, and guides IT integration, network configuration, firewall, and security, *etc.* according to agency policies.

f) Describe their status reporting capabilities for ongoing incidents.

Status Reporting for Ongoing Incidents

For change requests and problem reports both during and after the project, Niche provides ticket tracking for handling all customer requests.

- All work to be performed is broken down into a series of tickets, each of which is assigned a unique reference number.

- The tickets range from small application improvements and bug fixes to large customer-specific configuration changes and enhancements.

- The tickets are prioritized by the customer based on their business impact, the customer's scheduling requirements and the availability of the most suitable Niche development staff person for each job.

- Niche provides customers with regular reports as to the status of their reported tickets.

g) Provide their communication strategy to periodically report support-related statistics, e.g., trouble calls, system health and Contractor support performance metrics.

Communication Strategy

The Niche Project Manager is responsible for NicheRMS system support reporting. Niche and NYS will have regularly scheduled issue review meetings to review issues, track ongoing issues and perform support compliance reviews.

For production change requests and problem reports, Niche provides ticket tracking for handling all customer requests.

- All work to be performed is broken down into a series of tickets, each of which is assigned a unique reference number.

- The tickets range from small application improvements and bug fixes to large customer-specific configuration changes and enhancements.

- The tickets are prioritized by the customer based on their business impact, the customer's scheduling requirements and the availability of the most suitable Niche development staff person for each job.

- Niche provides customers with regular reports as to the status of their reported tickets.

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Niche also provides periodic analysis of system operation as part of its support service. It is very important to do this prior to and after hardware or software changes/upgrades. This analysis provides a performance baseline prior to the hardware or software change and an objective evaluation of the impact of the change after it is complete.

We also encourage our customers to contact us regarding any problems they are having with their system, as per the details of our Service Level Agreement, which can be provided on request.

h) Include escalation procedures and guidelines for NYS support staff to follow for contacting Contractor if problems are not resolved in a timely manner.

Procedures and Guidelines for Escalation of Problems

The issue escalation process is:

- NYS works with the Niche Project Manager to identify, monitor and resolve solve issues

- If the issue is not resolved, NYS escalates to the Niche Customer Support Manager.

- If the issue is not resolved, NYS escalates to the Vice President, Project Management, North America & Australasia.

- If the issue is not resolved, NYS escalates to the President.

All support procedures and guidelines are defined in the Service Level Agreement which is available on request.

Rqmt No.	Support Plan Requirement
SR2	New York State Police operates 24/7/365. Therefore, great importance is placed upon the most expedient response and resolution times possible. The Contractor shall provide support plan details that include a comprehensive, traceable list of their standard criteria and priority levels for support issues received from NYS. Contractor shall complete Table 1 below to substantiate response

Contractor Response

Table 1

Priority Level	Criteria	Initial Response Time*	Escalation Timeframe
1	**High** – The system is not operational or one or more core business functions are not operational.	00:30	6 hours unless otherwise agreed by the customer if diagnostic logs can be processed at the Niche office in Winnipeg, 12 hours if diagnostic logs can be processed remotely at the customer site, best effort if there is no access to diagnostic logs.
2	**Medium** – The system is operational but in degraded mode. This includes serious, persistent, system-wide performance problems, intermittent operation, or serious malfunction in core business functions.	00:30	1 day unless otherwise agreed by the customer if diagnostic logs can be processed at the Niche office in Winnipeg, 2 days if diagnostic logs can be processed remotely at the customer site, best effort if there is no access to diagnostic logs.
3	**Low** – The system is operational and users can use the system. This includes intermittent performance problems, intermittent malfunctions of some system functions, problems with a limited number of client installations, *etc*.	Next business day	Best effort practical
4	**Nuisance** – No significant operational impact. This includes malfunctions in low importance, infrequently used system functions, layout or spelling problems, *etc*.	Next business day	Future Release
5	n/a		

* Response Time is understood to mean an undertaking of action in the form of troubleshooting the issue.

Software support and maintenance

Niche Technology provides a full 12-month Warranty period that starts when the NicheRMS goes live, following customer Final System Acceptance of the software. After the 12-month Warranty period, Niche continues to support the customer as part of a longer-term maintenance contract.

Niche provides Tier 3 support for both Warranty and Maintenance as described in our standard Service Level Agreement (SLA). Our standard SLA includes all NicheRMS application software support, including software updates and bug fixes, enhancements, bug fixes and all required professional services.

Please note:

- Tier 1 and 2 support must be provided by customer technical support. As part of the implementation project, Niche provides the knowledge transfer necessary for customer staff to be able to provide these levels of support.

- Warranty and support for hardware is provided through the hardware manufacturer.

- Support for Operating System and database software is provided through Microsoft.

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Rqmt No.	Maintenance and Support Requirement
SR3	The Contractor shall certify that all future upgrades made to their base COTS solution will include all customizations made to meet the NYS requirements as defined in this RFQ and any future customizations negotiated during the term of this contract. "Customizations" used in this context should include all software modifications to the application, interface solutions and reports. The Contractor shall include, at a minimum, their approach to: (a) ensure that the solution will never be more than one (1) major release or version behind the currently supported and commercially available software release; (b) testing and installing the upgrades with limited production downtime, leveraging the high-availability configuration; (c) working with NYS to schedule upgrades when necessitated by 3rd party upgrades (e.g., O/S upgrades).
Niche Technology response: see our response material immediately following this table.	

NicheRMS product lifecycle and development strategy

We provide NicheRMS to police agencies worldwide, and our development strategy is to provide continuous development, support and maintenance services for NicheRMS. See below for key components of our approach.

Access to a continuously-evolving product

Our concept is of an evergreen product continually being refreshed and developed. Niche Technology's COTS model includes a renewal process aimed to prevent the system from ever falling into a legacy state. This allows our customers to avoid the high cost and disruption of RMS replacement every few years. We do not recognize the concept of a finite life for our product, as some other COTS suppliers do. We seek to continuously improve our product to meet our customers' evolving needs.

As a product, NicheRMS is tremendously configurable and extensible: it provides an extensive set of configurable features that allow a custom fit for each customer in terms of language, UI terminology, reports, interfaces, field options, validation rules, user permissions, *etc*. When we provide upgrades and new features, we provide them in a way that customers can install without losing their custom configurations. This means that each of our customers can run the current version of NicheRMS and take advantage of new features and technologies (evergreening). At the same time, the product will continue to support agency-specific configurations and needs.

All our customers are running the current version of NicheRMS, including customers who first started using the system 18 years ago. As our first large customer, the OPP/OPTIC consortium are a primary example of how this approach can work very well for a large customer.

Commercial model

Niche provides customers a perpetual license to use NicheRMS for a one-time license fee. In addition to this, customers pay a fixed annual support and maintenance charge which covers

not only the traditional 365/24/7 technical support, but includes all development of new functionality and features in the product requested by customers and added by Niche.

Customers can install upgrades without losing any existing features or function. No customer is required to install a new update if they don't want it, but this does not block them from installing other updates in future. New features are controlled using parameters—this means that a particular new feature can be turned on or off depending on whether or not you want to use it.

All Niche customers benefit from regular software enhancements, leading to system longevity. As part of our SLA, Niche typically aims for a major version release every 12 to 18 months. New releases include functional enhancements based on:

- Commitments made to new customers during the procurement process
- Features requested by existing customers
- Features required to support legal changes
- Features that take advantage of new technology

Smaller patches are issued on an as-needed basis, for example for bug fixes and updates required by changes to laws and regulations. Niche has a well-developed process for delivering and implementing patches and new versions, including tools that automatically perform synchronized updates of installed NicheRMS apps on widely dispersed workstations, notebooks, *etc.*

Regarding costs, all upgrades are made available to all Niche customers as part of our standard warranty and maintenance package, so there will be no additional costs for the software itself. If there are likely to be additional costs associated with an upgrade (*e.g.*, new functionality that requires specific hardware, such as signature tablets or barcode readers), Niche informs the customer well in advance.

Our strategy for growth and development

New functionality must be developed by Niche, though it is often done in partnership with one or more customers who provide requirements and feedback on the new feature(s). This is because there is only one version of the NicheRMS application source code, *i.e.*, there are no differences in the executable code, no matter where the application is installed. Differences between individually-installed systems come from the configuration files and system parameters. When Niche adds a new feature, we add it to the core software and turn it on or off using configuration parameters.

Because NicheRMS is a COTS product, we do not implement "one-off" customizations. However customers can still have all of the features and functionality they need. Niche adds new features when a customer requests a function or feature that cannot be provided by configuring the existing RMS product. Enhancements are built to meet the need at hand but they are also developed as configurable options so they may be used by Niche customers in other jurisdictions, states or countries. A new or altered feature is always added to the standard product, with configuration parameters controlling its behavior.

The new feature then becomes available to any customer that wants it. Because we add new features as configurable options, we can send out product upgrades that all customers can use. All software updates retain existing functionality while providing new functions to satisfy changes in policing requirements, and take advantage of new technology. Customers can go ahead and install the upgrade software without losing any of their existing configuration or functionality. New features are readily available for customers that want them, but no customer

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will lose features because of an upgrade, and no customer is forced to use a new feature they don't want.

In this way, Niche helps customers eliminate problems caused by purchasing a new system that deteriorates into legacy status over a short number of years, only to be replaced by a completely new system, causing massive disruption and expense.

Essentially, Niche does not customize the core RMS software – "custom" features are added as new functionality with configurable options that become available to all of our customers. In addition, Niche retains and maintains a set of configuration parameters for each customer (picklist contents, screen terminology, and so on), and simply applies those parameters to any new software version or upgrade before sending it to an individual customer. In this way, Niche maintains a single software core application, but customers continue to receive their own custom-configured versions.

Product Roadmap

It is useful to break the Niche product roadmap down into four distinct areas:

    (i)   Current customer requests for enhancements and features being added by Niche.

    (ii)   Features and enhancements to be added at the request of a given customer.

    (iii) Future, as yet unknown, features and functionality to be added to the product at the request of other existing customers.

    (iv) Technical enhancements and refresh added by Niche.

(i) Current enhancements being added/planned

At the moment, here are the main features that are planned to be added to the NicheRMS product as a result of individual agency requests, User Group priorities or Niche initiatives:

- Integrated analytics, including link analysis, mapping and other data visualization
- Digital Case File/Filing package
- Collisions reporting enhancements
- Enhanced Property Stores management
- Enhanced Warrants management
- Enhanced Forensics management

In addition to larger enhancements like the ones listed above, more than 1,100 system development tickets covering all aspects of NicheRMS capabilities are delivered to customers each year. All these developments are undertaken at no additional cost to customer agencies and the features are rolled up into the product and made available to all customers at no additional cost.

(ii) Customer requests

As part of any new Niche project it is usual for a customer to have specific requirements that they request be added to enhance the functionality of the product. These may be identified at the outset, or requested during an implementation project or throughout the life of the product. These would be added at no additional cost to the New York State, rolled up into the NicheRMS product, and made available to all customers at no additional cost. Some examples of where this has been done in the past:

- Support for investigative funds tracking, added at the request of the Arizona DPS
- Collisions reporting enhancements for US highway patrol agencies
- New Intelligence functionality added at the request of Police Service of Northern Ireland and Merseyside (UK) when their projects implemented the Niche Intelligence module

(iii) Future features

The NicheRMS product roadmap is a continuous process, matching the commercial model outlined above. We and our customers cannot know what specific functionality may be required in the future to support operational policing, but within the business areas covered by NicheRMS (and potentially new areas, *e.g.*, Forensics as above), Niche guarantees to work with customers and user groups to add new features in support of future demands, and all at no additional cost.

(iv) Technical features

NicheRMS is built and developed using the Microsoft technology stack. As Microsoft develops their technical platform and development tools, so Niche Technology moves with this to utilize new features and to add new capability into the NicheRMS product. For example:

- Support for new operating systems, RDBMS versions, *etc*. Note that this is not limited to simply being compatible with new platforms: rather we take advantage of new capabilities in new versions to enhance the NicheRMS product.
- Development of technical infrastructure to support evolving user requirements, including mobility and integration.
- Incremental re-platforming of NicheRMS components (part of NicheRMS product evergreening).
- UI infrastructure refresh.

Implications for the New York State

- The NicheRMS product available to the New York State today contains the core product and all the rich features and enhancements that have been added over 18 years, all for a one-off fixed license cost.

- All future enhancements to the NicheRMS product, whether currently on a roadmap or not, and from wherever derived, will be available to the New York State at no additional cost through the fixed annual support and maintenance charge.

- The New York State can request product enhancements at any time from Niche and without any requirement for approval by other agencies or a user group and such enhancements are delivered at no additional cost.