

RMS Attachment 2 - Functional Integration Requirements Niche Response

Note: This RMS Attachment 2, Functional Integration Requirements 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 Name: Niche Technology Inc.

Requirement Type: Functional Integration Requirements

Instructions:

- The following requirements are preceded by a Vision intended to provide contractors with general understanding of the mindset for the creation of the requirements. Nothing in the Visions shall be construed as requirements and they are not being scored.
- For detailed definitions in this document, refer to **Attachment B – Glossary of Terms**.
- The following requirements are labeled as mandatory (M) or desirable (D) requirements. If a Contractor is unable to provide an interface identified as mandatory the proposal will not be further considered.
- For each requirement contained within this document a response is required even if the response is indicating the functionality is not offered.
- If a requirement below is part of your existing RMS application functionality and a separate interface is not required, please indicate that in your response.
- For each requirement check the appropriate box:
 - **Offered** – the feature is currently available or can be integrated through customization.
 - **Not Offered** – the feature is neither currently available nor can it be integrated through customization.
- Where indicated, responses to certain requirements shall include a comprehensive narrative to explain the solution proposed by the Contractor. Examples of preferred functionality have been included in some requirements. Although not mandatory, contractors are encouraged to address if and how these examples are included in the solution. If additional space is needed the Contractor shall clearly label their response with the requirement identifier.
- NYS reserves the right to allow the Contractor to correct obvious errors of omission.

Integration Vision

Depending upon role or assignment, Members of the New York State Police may be required to interact with a number of systems and/or applications while fulfilling their responsibilities. Many of these applications are contained on separate networks and each requires their own user authentication process. These applications facilitate incident reporting, arrests, investigations, vehicle and traffic enforcement, as well as personnel management. The New York State Police envisions the proposed solution becoming a hub from which users seamlessly interact with these systems and/or applications thus increasing efficiency and reducing redundant data entry. These interactions may be transactional or require a file creation and a specified transmittal. They are broken into three categories with varying states of interconnectivity as follows:

- Interface – An end user initiated transaction that may exchange and/or modify data in either the RMS system or the external connected system.
- Data Exchange – Used to send statistical and/or reporting data from the RMS to an external system.
- Data Maintenance – Used to upload periodic changes to data/code tables into the RMS from an external source.

The following requirements detail the systems and applications, as well as the level of interaction expected from the Records Management System. The system should allow for integration with current and future products through web services and other modern technologies with little effort from the contractor or NYSP (See requirement *I24: Interface Development Tools*).

In addition, all solutions presented shall comply with the FBI Criminal Justice Information Services (CJIS) Security Policy¹ as well as NYS Information Technology Services Information Security Policy and any other associated policies, procedures and standards²

¹ For more information regarding CJIS security policy refer to the following link: <http://www.fbi.gov/about-us/cjis/cjis-security-policy-resource-center>

² For more information regarding NYS Information Technology Services Information Security Policies and Standards refer to the following link: <https://www.its.ny.gov/eiso/policies/security>

Integration Classification Table

Req #	Name	Classification
I1	Computer Aided Dispatch (CAD)	Interface
I2	Livescan	Interface
I3	Traffic and Criminal Software (TraCS)	Interface
I4	TraCS Data Access from RMS	Interface
I5	Laboratory Information Management System (LIMS)	Interface
I6	eJusticeNY Integrated Justice Portal (IJ Portal) Inquiry	Interface
I7	eJusticeNY Integrated Justice Portal (IJ Portal) Responses	Interface
I8	Mug Shot Viewing	Interface
I9	Coded Law File Update – New York State Laws	Data Maintenance
I10	Personnel Database (PDS)	Data maintenance
I11	Incident Based Reporting (IBR)	Data Exchange
I12	Public Information Office (PIO) Newsroom Website	Data Exchange

Req #	Name	Classification
I13	New York Data Exchange (NY-DEx)	Data Exchange
I14	New York Prosecutors Training Institute (NYPTI)	Interface
I15	Criminal Intelligence & Analysis System (CIAS)	Interface\ Data Exchange
I16	Crime Analysis Center (CAC) / Digital Information Gateway(DIG)	Interface\ Data Exchange
I17	Operation Safeguard	Interface
I18	State Police Integrated Data Exchange Router (SPIDER)	Interface
I19	Interstate Compact Offender Transfer Notification Service (ICOTS)	Data Exchange
I20	Regional Information Sharing Systems (RISS)	Interface
I21	Domestic Incident Report (DIR) Repository	Interface
I22	Breath Test Instrument	Interface
I23	Interface Development Tools	N/A

Req Status	Requirement I1: Computer Aided Dispatch (CAD)	Offered	Not Offered
M	The proposed solution shall provide for the ability to interface with the CAD systems currently utilized by the New York State Police and other NYS Law Enforcement Agencies.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Police currently utilize a Hexagon CAD system in three troops for routing and assigning patrols. The remaining eight Troops do not have a CAD or State Police patrol vehicles utilize a county CAD system that does not interface with the current RMS.

Current NYSP Operational Specifications:

Class	Exists today	Direction ¹	Frequency ¹	Trigger ¹	Format	Transfer Method ¹	Volume
Interface	Yes	One way – to RMS	On Demand and Scheduled	End User or Cron Job	XML	FTP	~90,000 per year

¹Alternative methods accepted

Refer to RMS Appendix 3 – Data Samples for data sample

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Integration with CAD

CAD integration is a standard feature of NicheRMS. The Hexagon CAD interface is currently used by 16 NicheRMS sites supporting 69 law enforcement agencies.

Niche will configure the CAD incident interface to import the NYSP-specific Hexagon CAD event format and fulfill NYSP-specific business requirements. Should it be necessary to integrate with the county CAD systems, Niche will configure the CAD interface to interpret those data formats.

Implementation process

- The event XML extract is implemented by Hexagon or by the customer; files are uploaded on a customer-determined schedule to a common file share that is accessible to the NicheRMS CAD import process. The schedule may be periodic (e.g., every 5 minutes), triggered (e.g., on incident creation, when important updates occur, on incident finalization, etc.), or a combination of the two.

- NYSP works with Niche to complete the CAD interface requirements and responsibilities questionnaire, and will provide Niche with XML events to use when fine-tuning the interface configuration. Although Niche has substantial experience integrating with Hexagon CAD:
 - Each customer that uses the Hexagon-to-NicheRMS CAD import process has local business requirements; this is the primary focus of the questionnaire. Questions include but are not limited to:
 - Will the CAD event number be used as the NicheRMS incident number, or should NicheRMS be configured to generate its own incident number?
 - Of the officers listed in the CAD event XML, which should be linked to the NicheRMS incident and how should they be classified?
 - Should the CAD interface use the available information to automatically choose a standard NicheRMS incident type, or will a NicheRMS user be tasked with this responsibility?
 - Each customer uses a different subset of the data elements within the standard Hexagon event format, and has different mappings of CAD code values to NicheRMS code values.
- The same questions and process apply to other sources of CAD data, such as the county systems, should it be necessary to import their data.

Additional information:

- NicheRMS CAD integration is not specific to Hexagon and can be used to support any number of additional, concurrent integrations with commercially-available CAD systems, such as Motorola, Xwave and Tritech or custom CAD systems that may exist in other agencies supporting the NYSP. This flexibility ensures that the NYSP can easily change, add or remove CAD vendors over time, while continuing to maintain a single view of CAD data from any number of sources within NicheRMS.
- The CAD interface is designed for high-availability with automatic fail-over should a process or server fail.
- The CAD interface is designed to be multi-threaded for high-performance The CAD interface logic can easily be changed or expanded at any time as business needs change
- CAD systems are able to use standard Niche-provided APIs to query into NicheRMS; this includes Hexagon CAD, as well as assorted other commercial and customer-developed CADs

Assumptions

Efficient configuration of the CAD import interface assumes the following.

- The Hexagon event format used by NYSP matches a standard Hexagon CAD event format, *e.g.*, ICADLINK_EVENT. The sample data provided by NYSP does not match a known Hexagon event format, however we expect that it will be possible to receive it. In the case that Niche needs to add support for another event format, there will be an additional amount of functional analysis and data specification time required of Niche and NYSP, at no extra cost to NYSP. In fact, there may be efficiency benefits to both NYSP and Niche in configuring the system to handle a common NYSP incident event format, such as the APIIncident format used in the CAD and TraCS example data, providing that the necessary NicheRMS business processes can also be met by that data format.

- The data in the event XML is sufficiently fielded for the purposes that it will be used.

In particular, if the NicheRMS import interface is expected to match and link to existing NicheRMS entities (*e.g.*, officers, subject persons, addresses), the event XML must provide separate data elements for the match criteria. If fielded elements cannot be provided, it will be difficult or impossible to perform reliable automatic resolution and linking of master files, and the customer will need to manually deal with entity resolution and data quality within NicheRMS.

For example, if Niche is expected to link to a dispatch/incident address, individual address elements must be provided (*e.g.*, street name, city, force boundary/ESZ information, X/Y information), rather than providing a compound address "label" that the import interface is expected to parse and interpret. Our experience with Hexagon integration is that its CAD events are sufficiently fielded to facilitate automatic resolution of the dispatch/incident address, and the ability to auto-resolve the entity is a matter of source data quality. This is just a representative example, but the same principle applies to other involved entities.

For more details on interfaces and integrations with NicheRMS, please see our detailed response to [Requirement I23](#) on page 46.

Req Status	Requirement I2: Livescan	Offered	Not Offered
M	The proposed solution shall provide for the ability to interface bi-directionally with the NYS Police electronic fingerprint processing system, and shall transmit and receive all data currently required.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Police currently utilizes approximately 190 BioMetrics4all Livescan terminals across the state for the capture and submission of electronic fingerprint and mugshot data. Arrests generated in the RMS system are transmitted to Livescan where the prints and photos are attached before being sent to the state AFIS (Automated Fingerprint Identification System). The State AFIS returns information to the Livescan system which in turn transmits information to the RMS.

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger ¹	Format	Transfer Method ¹	Volume
Interface	Yes	Bidirectional	On Demand	End User from RMS Automated from Livescan	NIEM XML	FTP	~35,000 per year

¹Alternative methods accepted

Refer to RMS Appendix 3 for data sample

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

LiveScan Interface

Niche Technology provides national standard LiveScan integrations that are in production use across Canada and the UK. Niche will configure the NYSP LiveScan integration in a similar manner to meet NYSP specific integration and business requirements. Typically, the LiveScan integration is implemented in the following way:

- At the appropriate places in the RMS workflow, NicheRMS is configured with a button and/or menu item allowing the user to request the person and arrest information be transferred to the Livescan system.

- Using a LiveScan supported secure web service, NicheRMS writes the necessary data to LiveScan system and update the NicheRMS with a success or failure message.
- Since the LiveScan interface is two-way, the NicheRMS will process incoming responses to update the RMS record and/or make appropriate user notifications.
- The LiveScan data is stored within NicheRMS for easy future retrieval and analysis.

Assumptions

The design specified above is dependent on the following integration-specific assumptions.

- Livescan messages are exchanged via secure web service end points for AFIS (requests) and NicheRMS (responses, if received asynchronously from the original request), respectively.

For more information regarding NicheRMS integration, including general assumptions and best practices, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I3: Traffic and Criminal Software (TraCS)	Offered	Not Offered
M	The proposed solution shall provide for the ability to directly import data from TraCS	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Police currently utilize TraCS to write traffic tickets, complete accident reports, and complete a variety of other forms. Following a validation process and transfer to the TraCS server, reports are imported into the current RMS which acknowledges receipt of the incident preventing further modifications within TraCS.

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency ¹	Trigger	Format	Transfer Method ¹	Volume
Interface	Yes	One way – to RMS	Automated	Manual (Supervisor Approval)	XML	FTP	~280,000 accidents ~ 1,025,000 tickets

¹Alternative methods accepted

Refer to RMS Appendix 3 for data sample

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Niche Technology will import data from TraCS by configuring the same standard incident import process interface that is used for CAD incidents. This will ensure easy integration and maintenance of the interface. The process of configuring this interface is detailed in our response to [Requirement I1](#) on page 9.

Niche will configure the incident import interface to import NYSP's specific TraCS XML event format and fulfill its business requirements, including providing an acknowledgement of receipt of the incident, in a form acceptable to TraCS, such as a unique NicheRMS incident reference number.

For more information regarding NicheRMS integration, including general assumptions and best practices, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I4: TraCS Data Access from RMS	Offered	Not Offered
D	The proposed solution should provide the ability to access TraCS data from within the RMS	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

Today, NYSP issues approximately 1 million tickets and 280,000 crash reports annually. Ticket and accident data is stored in TraCS. The new RMS solution should make TraCS data available from within the RMS for investigative purposes. These options can include importing data or accessing the data through an interface. These options shall comply with multitenant and CJIS security requirements within this RFQ.

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

TraCS Interface

The primary option for fulfilling this requirement is for Niche to configure the application to provide viewing access to TraCS.

- TraCS searching, where required, will be performed from standard NicheRMS search views. Results will be displayed alongside NicheRMS search results
- Viewing of detailed TraCS data will be implemented by launching the appropriate TraCS view, such as a URL for a web application or a locally installed application. This feature can be available from specific NicheRMS records, or, from the TraCS search results.

The ability to implement viewing of TraCS data is contingent on:

- TraCS providing Niche with access to suitable APIs or other methods to search and otherwise view the data that is required by NYSP; this can include a direct web-service based API within in-RMS searching, a method of launching a web view of TraCS using specific URLs, or a method of invoking a locally installed application.
- If a direct API connection is used, it must provide a secure mechanism that allows the user to log in via user ID and password or the same Windows credentials as their NicheRMS session.

If NYSP requires the use of historic TraCS data within NicheRMS-oriented business processes, such as producing case files, relating to other incidents, forming a rich picture of a person and/or vehicle, and so on, then TraCS users must be able to trigger a TraCS to NicheRMS incident rollover from within TraCS, with the incident data being imported by the same incident import interface that's used to fulfill #11 and #13.

The ability to implement a data import of selected TraCS records is contingent on:

- TraCS allowing qualified users to trigger a rollover of the incident to the NicheRMS incident import interface
- For TraCS data to provide sufficient fielded information to allow it to be secured in an appropriate way using NicheRMS role-based access controls.

We recognize that the data used for fulfilling I3 may not match the data that's required for investigative purposes in I4. As such, a joint requirements analysis would be required to determine the exact TraCS data that is required in NicheRMS, and whether it is important to carry it into NicheRMS in a fielded manner (i.e. into NicheRMS entities and fields), as a binary narrative copy (e.g., a basic incident report, some entities, and a comprehensive PDF).

Another option is to perform a one-time import of TraCS data into NicheRMS. This approach is generally discouraged, however, as our experience is that the cost of data conversions from legacy collision and citation systems generally exceeds the benefit. As such, this option is not included in the pricing we have provided.

For more information regarding NicheRMS integration, including general assumptions, best practices, and our NicheRMS plugin API, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I5: Laboratory Information Management System (LIMS)	Offered	Not Offered
M	<p>The proposed solution shall provide for the ability to maintain a real time two-way interface with the LIMS system for the intake and return of physical evidence.</p> <p>At a minimum the following fields shall be included in the interface of the proposed solution and LIMS:</p> <ul style="list-style-type: none"> ▪ Barcode ▪ Submitting Agency (ORI, TZS/Station Name, Other Police Agency Name) ▪ Case Number ▪ Item Number ▪ Item Description 	☒	☐

Description:

The New York State Police currently utilize the Porter Lee LIMS at the four State Police laboratories to manage every piece of evidence handled.

Examples of Preferred Functionality:

- Returned evidence shall include Laboratory created sub-item(s) as well as a means of identification of the laboratory that created said item(s).

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency ¹	Trigger ¹	Format ¹	Transfer Method ¹	Volume
Interface	No	Bi-directional	On Demand	End User	N/A	N/A	~21,000 per year

¹Alternative methods accepted

Refer to RMS Appendix 3 for data field descriptions

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Also provide a description of the contractor’s barcode scanning technology available (e.g., 1D, 2D). Reference additional pages, if necessary.

Laboratory Information Management System (LIMS)

We expect that the NicheRMS-to-LIMS and return communications will be performed using XML web services.

This integration will be subject to an in-depth investigation of its business and technical requirements. The following describes one possible approach for doing this work.

- Evidence is entered in the RMS property management module. The property management module typically generates a label containing a barcode value, uniquely identifying the item, as well as additional descriptive information, such as its type, make/model, its relation to an incident, offenses, and so on. 2-D barcodes can also be generated, but are normally not necessary.
- The LIMS data export process is triggered when a property item is marked as requiring transfer to a particular laboratory. A "pull" request from LIMS may also be supported, but that is contingent on integration capabilities from that system.
- When the property item is returned to the force, LIMS generates a push of information, including the item's unique identifier (the one on the RMS barcode). A pull of data from LIMS triggered by checking the item back into property stores, or manually, is also possible, but not recommended as the item may not return to stores, going to another laboratory, court, *etc.* instead.
- When the RMS receives the data from LIMS, it updates the RMS record, including adding reports to the RMS record. If the item has been broken down into pieces, the RMS would create a new "container" for the property, move the original property record into the container and add the samples created by the lab into the container. Flags or notes on the items would indicate that they were created by the lab.
- Note that items re-packaged by the lab should have a unique barcode on the outside of the new package. LIMS-specific barcodes can be attached to NicheRMS property records as external identifiers, and LIMS can leverage the NicheRMS "tag generation" routines to generate NicheRMS-specific tracking numbers, should it be necessary.

For more information regarding NicheRMS integration, including general assumptions and best practices please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I6: eJusticeNY Integrated Justice Portal (IJ Portal) Inquiry	Offered	Not Offered
M	The proposed solution shall have the ability to query the IJ Portal and receive business service responses, as described in the National Information Exchange Model (NIEM) - Conformant Information Exchange Package Documentations (IEPDs)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Police utilize the IJ Portal to maintain and query NY State, NCIC and NLETS data.

Examples of Preferred Functionality:

- DMV Only Inquiry - DMV Registration, Driver’s License Inquiries, Inspection Sticker inquiry requests
- Property Inquiry - Property Hot File inquiry requests for article, boat, guns, license plates, parts, vehicle and security records
- Person Inquiry – Wanted/Missing and Orders of Protection person inquiry requests

Current NYSOP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger	Format	Transfer Method	Volume
Interface	No	Bidirectional	On Demand	End User	NIEM XML	Web Service	N/A

Information on the NIEM Conformant IEPDs can be found at the following link: <http://troopers.ny.gov/IEPD/>

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

eJusticeNY Integrated Justice Portal (IJ Portal) Inquiry

This integration will be delivered using the NicheRMS Datamaxx Omnixx interface and related UI elements. Niche is delivering a similar interface with NicheRMS for Bexar County Sheriff’s Office, TX, Wichita Police Department, KS and for the Los Angeles Police Department.

The NicheRMS search UI will expose a variety of related search sources that can be searched in addition to or in lieu of the NicheRMS data store.

- The user's search will result in the NicheRMS application server layer storing the RISS search request within its guaranteed messaging system. The NicheRMS application server will then notify the NicheRMS Omnixx interface of the outbound search request.
- The NicheRMS Omnixx interface will pick up the request, and execute the search against Omnixx. The response from Omnixx from will be stored within the NicheRMS persistent messaging mechanism until it is no longer required by the end user. The end user application will be notified of the existence of the search result so that it can be displayed.
- Search result data will be displayed in-line with NicheRMS search results, but will be visually distinguishable from NicheRMS search results. The exact data to display and whether per-record operations need to be supported (e.g., drill-down in the IJ portal for more information, reuse of data returned by the IJ portal) will need to be decided through joint functional discussions between Niche, Datamaxx, and NYSP, during the implementation phase of the project.

This same approach is currently taken for the NicheRMS Canadian Police Information Centre (CPIC) integration, which itself is a broker allowing query of multiple Canadian policing systems.

Support for this interface will be provided by the Datamaxx Omnixx EDGE interface using the Omnixx Enterprise Platform for all routing and data message construction. The use of EDGE allows for multiple queries to be spawned from a single input set from the RMS system. This is based on the context of the data elements provided in the query. For example, a request may contain personal identities (e.g., Name, Date of Birth, etc.). The combinations are calculated in such a way that all potential queries are sent to the IJPORTAL from the single RMS request. The EDGE interface also allows for disparate data sources to be accessed simultaneously. This permits another data source (e.g., the mugshot data source) to be queried, even though it uses a different communications strategy and data stream format.

For more information regarding NicheRMS integration, including general assumptions and best practices please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I7: eJusticeNY Integrated Justice Portal (IJ Portal) Responses	Offered	Not Offered
D	The proposed solution should have the ability to parse responses and import data to be used in the RMS while maintaining NIEM compliance.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Police utilize the IJ Portal to query NY State, NCIC and NLETS data.

Examples Preferred Functionality:

- Using IJ Portal response data to create an entry in the RMS
- Ability to attach Portal response to an entry within the RMS

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger	Format	Transfer Method	Volume
Interface	No	Bidirectional	On Demand	Transactional response	NIEM XML	Web Service	N/A

Information on the NYSP Response specifications can be found at the following link: <http://troopers.ny.gov/IEPD>

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

eJusticeNY Integrated Justice Portal (IJ Portal) Responses

This integration will be delivered using the NicheRMS Datamaxx Omnixx interface and UI elements that are described in I6. Niche is delivering a similar interface with NicheRMS for Bexar County Sheriff’s Office, TX, Wichita Police Department, KS and for the Los Angeles Police Department.

The exact functional handling of each data type will need to be decided through joint functional discussions between Niche, Datamaxx, and NYSP, during the implementation phase of the project. For example, the exact use of IJ Portal response data to create new entries or to attach response data to existing NicheRMS entities.

Support for this interface will be provided by the Datamaxx Omnixx EDGE interface, via the Omnixx Enterprise Platform (OEP).

The Omnixx EDGE interface supports responses, which are actually requests at the protocol level, for the data responses to queries and updates, and potential unsolicited messages sent via the IJPORTAL. The use of EDGE allows for processing and routing of response back to the originator, or held in queue if the originator is not available. Parsing into formats suitable for the RMS, visual formatting and handling of potential undeliverable messages due to invalid data in the response or other issue, such as a mis-addressed response is handled by the rules engine inherent with the OEP. The parsing, formatting and overall processing is controlled by the Omnixx Enterprise Platform rules engine and its processing scripts.

Req Status	Requirement I8: Mug Shot Viewing	Offered	Not Offered
M	The proposed solution shall allow for the viewing of mug shots of associated Master Name Index records within the RMS.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Police utilize the Criminal Justice Photo Repository (CJPR) to view mugshots. The Photo Repository is independent of and not accessible through the current RMS. The CJPR can support viewing mugshot records to the proposed solution or a web service interface. Any solutions provided shall honor all multitenant security solutions provided by the contractor, and shall comply with all CJIS security and NYS Security Policies and Standards referenced in this RFQ.

Examples Preferred Functionality

- Allow the user to see the mugshot associated with a specific arrest within the RMS
- Include an interface to the CJPR allowing users to view mugshots associated with appropriate master indices.

Refer to RMS Appendix 3 – Data Samples for data sample sent from the external *NYS Criminal Justice Photo Repository*.

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Mug Shot Viewing

We expect the following approach to be taken to provide access to associated MNI records.

- NicheRMS will expose search-level and per-person end user functionality to retrieve mugshots from CJPR.
- Where allowable by NYSP and CJPR, we expect to offer the ability to save mugshots directly to person records within NicheRMS. This will facilitate their more direct use within NicheRMS, for example in embedded reports, case file information, and photo line-ups.

Support for this interface will be provided by the Datamaxx Omnixx EDGE interface, via the Omnixx Enterprise Platform (OEP). The use of EDGE with the OEP allows for single or multiple queries to be spawned from a single input set from the RMS system. This is based on the context of the data elements provided in the query. For example, a request may contain personal identities (e.g., Name, Date of Birth, etc.). The combinations are calculated in such a way that all potential queries are sent to the mugshot interface, when such a request is indicated and the master index that points to the mugshot is available.

This permits another data source (e.g., the IJPORTAL) to be queried simultaneously, even though it uses a different communications strategy and data stream format.

It is assumed that all responses will be provided using the industry standard "base64" encoding. The conversion to the native format for display will be handled either at the EDGE interface or in the RMS client, depending on the design chosen. A discovery and documentation process will be required in order to establish the correct Interface Control Document and the security requirements.

For more information regarding NicheRMS integration, including general assumptions and best practices please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I9: Coded Law File Update – New York State Laws	Offered	Not Offered
M	The proposed solution shall provide the ability to perform batch updates as changes occur to New York State laws. New York State laws shall be maintained centrally and utilized by all tenants of the records management system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Coded Law file is currently disseminated by DCJS in several file formats. Other NYS Laws are provided in a separate file by NYS DMV. The New York State Police currently performs a bulk upload of state laws to the SJS records management system upon notification of updates to the Coded Law File.

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger ¹	Format ¹	Transfer Method ¹	Volume
Data Maintenance	Yes	One way – to RMS	On Demand	Manual DB update	DB table	DB Connection	N/A

¹Alternative methods accepted, XML preferred

Information regarding the DCJS Coded Law File Relational Database can be found at the following link:

<http://www.criminaljustice.ny.gov/crimnet/clf/rel-db/rel-db.htm>

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Coded Law File Update – State Laws

All Niche customers require the ability to load information on statutes and laws into the NicheRMS database, and Niche provides a suite of tools to support customers in loading and maintaining this data.

Niche will configure existing functionality to allow NYSP to bulk load all NYS laws into the database and maintain them in subsequent updates by NYS. In addition, NicheRMS provides system administrators with tools for viewing and updating individual statutes and laws on an individual basis, for example if there is a need to update a single law.

All of this can be carried out by customer system administrators without the need to stop the system, and can be maintained centrally.

For more information regarding NicheRMS integration, including general assumptions and best practices, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I10: Personnel Data System (PDS)	Offered	Not Offered
M	The proposed solution shall provide the ability to perform bulk and single entry updates to the new RMS from PDS as changes are made to personnel information within PDS.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Police Personnel Data System (PDS) is the authoritative source for personnel information such as an employee’s assigned TZS and supervisor. Updates are made as personnel join, transfer to another location, or leave State Police service.

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency ¹	Trigger ¹	Format ¹	Transfer Method ¹	Volume
Data Maintenance	Yes	One way – to RMS	Scheduled	DB update	DB table	DB Connection	N/A

¹Alternative methods accepted

Refer to RMS Appendix 3 for data sample

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Personal Data System (PDS)

Niche has existing tools for bulk-loading employee and unit information during initial database setup. Many of our existing customers are already bulk-loading updated data on a regular basis; others prefer a real-time interface. Niche has a base HR interface that can be used for either near real time or periodic batch updates of personnel and organizational structure information. Niche will perform interface configuration that is required to support NYSP-specific requirements.

Assumptions

The use of the aforementioned HR interface is dependent on:

- NYSP providing a scheduled XML extract of the HR data, matching an XML schema to be provided by Niche.

- At a minimum, the incoming data must include an unambiguous way to identify all entities present in the data feed, such as employees, units, and so on.
- Customers may produce XML that combines data from a combination of systems, such as the PDS referenced by NYSP, Active Directory, and so on.

NYSP having worked with Niche to set up an appropriate representation of the NYSP organizational structure, end user roles, domains, and so on.

For more information regarding NicheRMS integration, including general assumptions and best practices, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I11: NY Incident Based Reporting (IBR)	Offered	Not Offered
M	The proposed solution shall support the file generation and submission required by the New York State specific IBR standards.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Police will be expected to submit monthly IBR extract files to NYS Division of Criminal Justice (DCJS) using New York State IBR standards. The NYSIBR data variable and submission format differ from National Incident Based Reporting System (NIBRS) requirements.

Information regarding current NYSIBR standards can be found at the following link:
http://www.criminaljustice.ny.gov/crimnet/ojsa/crimereporting/ibr_ref.htm

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

NY Incident Based Reporting (IBR)

NicheRMS currently supports IBR reporting. The existing NicheRMS IBR framework will be configured to support the data and business logic required by New York State. Niche will perform this work as part of the project.

The NicheRMS IBR functionality consists of:

- A robust incident entry and management module that provides substantial guidance and validation at report entry time
- A method for transforming the NicheRMS incident data model into a secondary IBR-specific data model
- A flexible validation engine that is used to apply IBR-specific data quality and business logic
- An IBR preview function that allows the user to preview the IBR output for a given record prior to submission
- An IBR extract process that outputs the incidents that match some criteria, and tracks the list of extracted incidents

For more information regarding NicheRMS integration, including general assumptions and best practices, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I12: Public Information Office (PIO) Newsroom Website	Offered	Not Offered
M	The proposed solution shall provide a mechanism for a rules based extraction of designated RMS data to a table for scheduled processing by an existing external Crystal Reports job.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Police posts information on incidents from their current records management system (SJS) and accident information from TraCS to a media website. Information is posted based on criteria as specified by the agency to the NYSP newsroom website.

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger	Format	Transfer Method	Volume
Data Exchange	Yes	One way	Scheduled	Stored Procedure	Data table	Database Connection	N/A

¹Alternative methods accepted

Refer to RMS Appendix 3 for data field descriptions

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Newsroom Website

NicheRMS fully satisfies this requirement and provides several options for extracting data for reporting purposes, including publication to a media website, and this use case is being filled by existing NicheRMS functionality at various production implementations.

We expect NYSP to choose the implementation options that best suit their internal practices and local technical experience. Options are not-mutually exclusive, and include:

- The direct use of the NicheRMS reporting database; this option would likely only be used if NYSP intended to perform a partial ETL into an established data store. In this case:

- NYSP would make use of the standard support tools provided by Niche for this job, which include a data model navigation tool, schema documentation, database-level facilities to automatically map code values to user-readable values (e.g., RES to Residence), and so on.
- NYSP will execute the queries against the NicheRMS reporting database, to reduce the potential impact of the extract on the operational database.
- Niche would provide substantial support to NYSP in the form of expert developer advice and assistance; this can take the form of performance tuning, data model interpretation, and query writing assistance.
- An extract from the application layer of the system, designed either as Niche application SQL queries or as an extract from the NicheRMS web service. This option is similar to the database-direct approach, but has a few differences.
 - NYSP would still use the Niche-provided application data model tool.
 - NYSP would write Niche application SQL or web service calls instead of T-SQL; this is a job that is commonly done by NicheRMS customers of all sizes.
 - NYSP would still retrieve data from the NicheRMS reporting database, via "QueryServer = Report" directives included with the application commands.
 - An application layer command can make use of all NicheRMS application layer features, such as security (role-based access control, ACL enforcement, and audit), data transformation, navigation of the object-oriented data model, and so on.
- One or more NicheRMS data output reports, developed by either Niche or NYSP. Reports can be executed manually or scheduled to run using a Niche-provided report execution utility. This is a similar approach to the previous option, but includes a step to translate the extract query into a format that can be used directly by the web site, such as HTML.

For more information regarding NicheRMS integration, including general assumptions, best practices, use of the NicheRMS reporting database layer, and information about the NicheRMS reporting features, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I13: New York Data Exchange (NY-DEx) The proposed solution shall allow for data sharing to the NY-DEx System using the established web service	Offered	Not Offered
M		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The NY-DEx system is designed to assist law enforcement with data-sharing across jurisdictional boundaries All current transmittals are provided utilizing a web service maintained by ITS. Data contains an entire incident, based on whether it had some change occur since the previous transmittal.

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger	Format	Transfer Method	Volume
Data Exchange	Yes	One way – to NY-Dex	Scheduled	DB update	NIEM XML	Web Services	1.8 Million

Information on the NY-DEx system can be found at the following link: www.criminaljustice.ny.gov/ojis/niem_nydex.htm.

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

New York Data Exchange (NY-DEx)

NY-DEx support is expected to be implemented using the established NicheRMS publisher framework, which has been used to develop export processes to similar systems such as:

- Canada: RCMP-hosted Police Information Portal (PIP), a national database containing incident and person information
- UK: Police National Database (PND), a national repository of intelligence-focused data from all policing areas (crime, intelligence, custody, etc.)

In this implementation, the NY-Dex publisher would include some combination of the following components:

- A set of extract and transformation routines that generate Incident Report records from the NicheRMS application server layer; the application server in turn directs its queries to the replicated reporting database, to avoid incurring substantial load on the operational database.
- A Niche-provided publisher tracking database, external to the primary NicheRMS database, that contains a history of records that have been published to NY-Dex.
- A Niche-defined set of NY-Dex-oriented change detection routines. Two forms of change tracking are implemented.
 - Real-time change detection, which is implemented as database-level triggers within the transactionally replicated reporting database; the publisher picks up the change detection notifications and processes them as they are encountered.
 - A "slow crawl" process, which is a repeated iteration over the full data set. This is used for bulk publications, and is also used to detect certain types of changes that are not necessarily suitable to a triggered change tracking process.
 - State changes that occur independently of an overt data-level change; for example, changes to the user-readable interpretation of a NicheRMS code value, or the expiry of a report's non-disclosure date.
 - Mass data changes, such as an import of legacy data into NicheRMS and restructuring/remapping of NicheRMS data.
 - Any changes that should have been added to the real-time change tracking routines, but were omitted due to a gap in the specification process.

Implementation will also include a customer-led and Niche-supported configuration of appropriate security handling, such as:

- NY-Dex-specific role-based access controls, to ensure that certain classifications of data are not rolled over to NY-Dex, if any exist.
- Configuration of NicheRMS data classifications and access control lists to ensure that the NY-Dex publisher can export exactly the records that are expected by NYSP and NY-Dex.

For more information regarding NicheRMS integration, including general assumptions, best practices, use of the NicheRMS reporting database layer, and information about the NicheRMS publisher framework, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I14: New York Prosecutors Training Institute (NYPTI) The proposed solution shall provide a two-way interface with the ability to transmit case data and receive case dispositions from the Prosecutors Case Management System (PCMS) including attachment of encrypted PDFs.	Offered	Not Offered
M		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Police and other participating law enforcement agencies throughout New York State currently interface with the New York Prosecutors Training Institute Prosecutors Case Management System (PCMS) from the existing RMS. This interface is used to send information associated with an arrest from the corresponding law enforcement agency to District Attorney offices in 53 counties across the state.

Current NYSP Operational Specifications:

Class	Exists today	Direction ¹	Frequency ¹	Trigger	Format	Transfer Method	Volume
Interface	Yes	One way – to NYPTI	On Demand	Manual user transmission	Encrypted PDF, XML	Web Services	N/A

¹Alternative methods accepted

Refer to RMS Appendix 3 for data sample

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

New York Prosecutors Training Institute (NYPTI)

NicheRMS includes a robust case file module that has been interfaced with a variety of prosecution and court systems. At a high technical level, this functionality and its integrations support:

- The production of structured (*e.g.*, XML, JSON) and binary (*e.g.*, PDF, HTML, DOC) from NicheRMS case data.
- The receipt of case and charge disposition information (as well as charging guidance, *etc.*) from prosecution and courts, and attachment to the related NicheRMS entities.

Our extensive experience with this class of systems leads us to expect the following design for the PCMS integration.

- Following the entry and assembly of case file information, a NicheRMS user submits a case information package to the PCMS. This package makes up the Case Detail package. The NicheRMS application server layer will store the "submit CaseDetail" request within its guaranteed messaging system, and notify the NicheRMS-side PCMS interface of the request. The NicheRMS application server layer will notify all necessary users of the request submission.
- The PCMS interface will pick up the request, send it to the remote PCMS service, and mark the request as having been sent, or in the case of a failure, as having failed. The NicheRMS application server layer will notify all necessary users of the request status.
- Upon creation of updated disposition guidance, PCMS will send an appropriately structured message to the NicheRMS PCMS service's receiving endpoint, which will be a web service. The NicheRMS PCMS service will then relate the response to the originating request, and notify all necessary users of the response.
 - The response may be dealt with:
 - Automatically, *e.g.*, dispositions added directly to the case and/or its constituent parts. This requires the data and business processes to support unambiguous automatic action.
 - Manually, *e.g.*, a person looks at the response information before deciding on a decision about how to proceed with the disposition.

Assumptions

The design above is dependent on:

- The provision of a target web service to post case data to.
- The ability of the remote case system to send responses (*e.g.*, disposition info) back to a web service.
- The exchange of unique identifiers to allow for the attachment of disposition information to the appropriate records.

- A single rollover of the case data to NYPTI; in the circumstance that a case is updated and submitted multiple times, the integration will need to account for that, and this is not reflected above. This is a common practice for systems that are integrated with NicheRMS, but it is by no means a global one.
- Being provided with the specification of the encrypted PDF format to use and the customer having appropriate tools for generating and reading said PDFs. NicheRMS currently supports customer-side redaction of PDFs using an integration with Adobe Acrobat (licensed by the customer), and it is assumed that a similar mechanism will be used here, in the case that encrypted PDFs are required. Alternate methods will be assessed on a case-by-case basis.

For more information regarding NicheRMS integration, including general assumptions and best practices, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I15: Criminal Intelligence & Analysis System (CIAS) The proposed solution shall provide the ability for CIAS to search RMS data with no impact on the transactional performance of the production RMS system.	Offered	Not Offered
M		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Intelligence Center (NYSIC) utilizes the Criminal Intelligence & Analysis System to provide access to multiple, disparate databases in a single search. The current New York State Police records management system is one of the data sources included in the CIAS federated search. Currently, CIAS searches a nightly backup of SJS to limit impact on the production system.

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger	Format ¹	Transfer Method ¹	Volume
Interface\ Data Exchange	Yes	One way read from RMS Reporting Database	On Demand	Manual Inquiry	Java to Oracle	DB Connection	36,500 per year

¹Alternative method preferred – API or web service

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Criminal Intelligence & Analysis System (CIAS)

We expect that CIAS access to NicheRMS data will be implemented against the NicheRMS web service toolkit, which includes approximately 300 out-of-the box operations, and can be extended to provide additional NicheRMS access on an as-needed basis, both by Niche and its customers through the use of "loadable functions".

The web service includes a highly flexible ad-hoc search and "drilldown" retrieval API; calls to this API can be directed to use a read-only reporting DB replica as its data source. We expect this web service operation to form the basis of the CAC, and will work with NYSP and NYSIC to fill any API gaps that may prevent its use as a CIAS data source.

For more information regarding NicheRMS integration, including general assumptions, best practices, and more information regarding NicheRMS application layer support for reporting databases, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I16: Digital Information Gateway (DIG)	Offered	Not Offered
M	The proposed solution shall allow for full access to data for agencies participating with the Crime Analysis Centers (CAC) based on agency defined data sharing rules, in a manner that has no impact on the transactional performance of the production system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The New York State Division of Criminal Justice Services has established Crime Analysis Centers (CAC) as data sharing cooperatives in multiple locations counties outside of New York City. The purpose of the CAC's is to enhance traditional crime-fighting strategies through utilization of numerous databases and records management systems from law enforcement agencies in each county, allow center staff to provide local law enforcement agencies with a wealth of information to solve and prevent crime. DIG searches a nightly backup of SJS to limit impact on the production system.

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger	Format ¹	Transfer Method ¹	Volume
Interface\ Data Exchange	Yes	One way read from RMS Reporting Database	On Demand	Manual Inquiry	Oracle DB	ODBC Connection	~350,000 per year

¹Alternative method preferred – API or web service

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Digital Information Gateway (DIG)

We expect that CAC access to NicheRMS data will be implemented against the NicheRMS web service toolkit, which includes approximately 300 out-of-the box operations, and can be extended to provide additional NicheRMS access on an as-needed basis, both by Niche and its customers through the use of "loadable functions".

The web service includes a highly flexible ad-hoc search and "drilldown" retrieval API; calls to this API can be directed to use a read-only reporting DB replica as its data source. We expect this web service operation to form the basis of the CAC, and will work with NYSP and SJS to fill any API gaps that may prevent its use as a CAC data source.

For more information regarding NicheRMS integration, including general assumptions, best practices, and more information regarding NicheRMS application layer support for reporting databases, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I17: Operation Safeguard	Offered	Not Offered
D	The proposed solution should accept a portal originated web service transmittal of Operation Safeguard data, as well as allow for the upload of an excel spreadsheet containing compiled Operation Safeguard data.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The Operation Safeguard Program is New York State’s counterterrorism/criminal outreach program that seeks to educate the business community on potential criminal/terrorist activity indicators, and promote recognition and reporting of suspicious activity to Terrorism Tip Line or local law enforcement. The business contact and visit information for this outreach are entered into the Operation Safeguard Database (which is NYSIC’s case management system, ACISS) via the eJustice Integrated Justice Portal.

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger	Format	Transfer Method	Volume
Interface	Yes	One way – To RMS	On Demand	Manual	Alpha-Numeric	Web Service	N/A

Refer to RMS Appendix 3 5 for data information

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Operation Safeguard

We expect the NicheRMS Operation Safeguard integration to have the following characteristics:

- A NicheRMS web service will receive the agreed data format from Operation Safeguard.
- The NicheRMS integration will transform Operation Safeguard data into the appropriate NicheRMS data structures; this may consist of fielded NicheRMS data (i.e. entities and fields), rendered event information (e.g., as text, HTML, etc.) that is attached to appropriate entities, or a combination of the two.
- If necessary, an import tool will be produced to allow the process of compiled Operation Safeguard data into NicheRMS.

We expect the functional requirements for this integration to drive the technical details for the integration, as the target NicheRMS records and UI will need to support the business use of the Operation Safeguard data within NicheRMS.

As such, in order to define the processing and data exchanges, a discovery and documentation session will be held with involved parties, during or following the initial functional analysis of this item by NYSP and Niche.

For more information regarding NicheRMS integration, including general assumptions, best practices, and more information regarding NicheRMS application layer support for reporting databases, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I18: Statewide Police Integrated Data Exchange Router (SPIDER) The proposed solution should provide NYSP Staff the ability to interface with SPIDER	Offered	Not Offered
M		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The SPIDER System facilitates the transfer of Ticket and Accident Data from the Law Enforcement Agencies and that generate this data to the State Agencies that have needs for it such as the Division of Motor Vehicles, Department of Transportation and Office of Court Administration. Today SPIDER scans the TraCS export folder for tickets that are two days old and for collision reports that are approved by a Supervisor

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger	Format	Transfer Method	Volume
Interface	Yes	One Way from RMS	Scheduled	DB Stored Procedure	XML	File Share / File Copy	Over 1 million annually

NYSP is looking for the contractor to explain how this can be achieved.

Refer to RMS Appendix 6 - E-Ticket Accident Rpt Specification

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Statewide Police Integrated Data Exchange Router (SPIDER)

NicheRMS can be configured to store finalized ticket and collision reports as "snapshot" XML; this snapshot is produced and saved upon certain application triggers, e.g., issuing/printing a ticket, supervisor approval of accident report, etc.

We expect this configuration to be used for the NYSP implementation of NicheRMS, as it allows master-filed core entities (persons, addresses, vehicles, etc.) to evolve over time without affecting the "as-at" view of an incident.

This snapshot XML is straightforward to transform into the necessary target specification, providing that the required data is captured and validated at entry time. The XML format in question is currently being exported from production NicheRMS sites to state and provincial system, using extract processes that have been developed by both Niche and its customers.

In the case that NYSP chooses to implement their own extract and subsequent transformation of the data to the mandated XML formats, Niche will provide direct development support to NYSP technical resources. Alternately, if NYSP requires that Niche provide the extract and transformation processes, Niche will configure its existing report extract process to produce the desired data.

For more information regarding NicheRMS integration, including general assumptions and best practices, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I19: Interstate Compact Offender Tracking Systems (ICOTS) The proposed solution should provide the ability to import a NIEM compliant XML ICOTS file into the RMS, and automatically create a new task/assignment within the RMS.	Offered	Not Offered
D		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The Interstate Commission for Adult Offender Supervision (ICAOS) is an organization of Compact commissioners appointed by the 53 member states to make rules that carry out the policies under which offenders are transferred between and among states.

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger	Format	Transfer Method	Volume
Data Exchange	Yes	One way – To RMS	Scheduled	Scheduled (daily)	NIEM XML	Web Service	~500 per year

Refer to RMS Appendix 3 – Data Samples for data sample

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Interstate Compact Offender Tracking Systems (ICOTS)

We expect that a NicheRMS web service will be implemented for this project, possibly in conjunction with the NicheRMS incident import interface, and that the integration will perform a semi-automatic import of the ICOTS data. This will give the RMS user performing the import an opportunity to review the incoming, perform the semi-automated master filing operations and correct any errors in the data.

An RMS task can be created automatically where required.

Prior to developing this interface, Niche and NYSP will need to perform a functional needs analysis. In particular, it will be critical to decide:

- What level the data will be fielded within NicheRMS
- How to attach ICOTS offenders to events (e.g., incidents, information reports, etc.) within the NicheRMS database

- Which offenders are:
 - Automatically imported into NicheRMS
 - Available for manual import into NicheRMS
 - Never imported into NicheRMS

For more information regarding NicheRMS integration, including general assumptions and best practices, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I20: Regional Information Sharing Systems (RISS) The proposed solution should facilitate the exchange of core entities (People, Addresses, Telephones, Businesses and Vehicles) between the RMS and the RISS Centers.	Offered	Not Offered
D		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

This interface allows New York State Intelligence Case Management System users to search RISS for People, Addresses, Telephones, Businesses and Vehicles from within the Case Management System. In turn, RISS Intel users can search the NYSIC’s case management system for the same entities. Information is exchanged using the Global Justice XML Data Model (GJXDM).

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger	Format	Transfer Method	Volume
Interface	Yes	Bidirectional	On Demand	Manual	GJXDM XML	Web Service	Unknown

Refer to RMS Appendix 3 – Data Samples for data sample

Information on the GJXDM can be found at the following link: <https://it.ojp.gov/default.aspx?area=nationalInitiatives&page=1083>

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Regional Information Sharing Systems (RISS)

It is expected that the RISS Interface will be implemented in the following way.

NicheRMS end user searching of RISS

- The NicheRMS end user application will implement a RISS search source that allows users to direct their searches to RISS instead of or in addition to searching the NicheRMS data store.
- The user's search will result in the NicheRMS application server layer storing the RISS search request within its guaranteed messaging system. The NicheRMS application server will then notify the NicheRMS RISS interface of the outbound search request.

- The NicheRMS RISS interface will pick up the request, and execute the search against the RISS web service. The response from RISS will be stored within the NicheRMS persistent messaging mechanism until it is no longer required by the end user.
- RISS search result data will be displayed in-line with NicheRMS search results, but will be visually distinguishable from NicheRMS search results. The exact RISS data to display and whether per-record operations need to be supported (e.g., drill-down in RISS for more information) will need to be decided through joint functional discussions between Niche and NYSP, during the implementation phase of the project.

Note that this model of operation is well-established within NicheRMS installations; the Canadian PIP (Police Information Portal) supports such a method.

RISS search of NicheRMS

- NicheRMS will expose web service methods that allow RISS to perform searching of its data store.

The out-of-the box NicheRMS API already supports a very rich Detailed Find method that allows users to search and return details of all of the necessary entities.

In the case that RISS is able to write their own NicheRMS adapter to access this API, there will be very little to do. Otherwise, Niche will need to work with NYSP and RISS to perform an appropriate mapping of the RISS use of GJXDM to NYSP's configuration of NicheRMS.

Assumptions

For more information regarding NicheRMS integration, including general assumptions and best practices, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I21: Domestic Incident Report (DIR) Repository	Offered	Not Offered
D	The proposed solution should provide the ability to electronically send DIR reports and DIR data to the DIR Repository.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The DIR repository, maintained by DCJS, allows searching by name, address and can generate a summary of all domestic violence activity at a specific location, including the number of reports filed and if there are ‘red flag’ indicators, e.g., threats that were made and or access to a weapon. A project is underway to automate the transmission of incident data as well as an electronic image of the domestic incident form. It is anticipated that this project will include the use of web services in this automated process to transmit a subset of the data captured on the domestic incident form in conjunction with the image of the report.

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger	Format	Transfer Method	Volume
Interface	No	One way – To DIR Repository	On Demand	N/A	NIEM XML	Web service preferred	N/A

Refer to RMS Appendix 3 – Data Samples for metadata

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Domestic Incident Report (DIR) Repository

It is expected that a future Domestic Incident Report (DIR) repository interface could be produced in the following way.

- The NicheRMS end user application will provide a user interface element, such as a button or menu item, that the user will use to request the rollover of a particular domestic incident report to DIR.
- The NicheRMS application server layer will store the "publish domestic incident report" request within its guaranteed messaging system, and notify the Niche-developed DIR repository interface of the request.

- The Niche-developed DIR interface will pick up the request, send it to the DIR repository web service, and mark the request as having been sent, or in the case of a failure, as having failed.
- NYSP may choose to retain a record of the rollover to DIR; the options for doing this will be discussed during implementation, but would typically be chosen from the following options.
 - The automatic creation of an activity log on the NicheRMS incident record
 - An update to a "last sent date"

This model of operation is common within NicheRMS installations; for example, various Niche-developed case file and "rollover" interfaces push data to a target system and update the source record to indicate that it has been sent to an external party.

Assumptions

The design above is dependent on the provision of a target web service to post domestic incident reports to.

In the case that another mechanism is used for the transmission of DIR data, or there is a need for bidirectional communication or processing of non-trivial web service responses (such as writing data back to the NicheRMS data model), the design would change.

For more information regarding NicheRMS integration, including general assumptions and best practices, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I22: Breath Test Instrument The proposed solution should provide NYSP Staff the ability to interface with the State Police Breath Test Instruments.	Offered	Not Offered
M		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

The current NYSP ticketing system (TraCS), has a two way interface with the NYSP breath test instrument system. TraCS provides person information to the breath test system and the breath test system provides information back to TraCS regarding test results.

Current NYSP Operational Specifications:

Class	Exists today	Direction	Frequency	Trigger	Format	Transfer Method	Volume
Interface	Yes	Two-way from TraCS	On Demand	?	XML	File Share / File Copy	12,824

NYSP is looking for the contractor to explain how this can be achieved.

Refer to RMS Appendix 3 – Data Samples for Data Fields

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Breath Test Instrument

It is expected that the Breath Test Instrument Interface will be implemented in the following way.

- The NicheRMS end user application will provide a user interface element, such as a button or menu item, that the user will use to request the rollover of person information to the breath test system.
- The NicheRMS application server layer will store the request within its guaranteed messaging system, and notify the Niche-developed Breath Test Instrument interface of the request.
- The Niche-developed Breath Test Instrument interface will pick up the request, and write the necessary data to the destination file share.

- The sending aspect of the Breath Test Instrument interface will mark the request as having been sent, or in the case of a failure to write to the file share, as failed.
- The receiving aspect of the Breath Test Instrument interface will wait for incoming response files, attach the responses to their corresponding requests, and mark the requests as having received responses. The system will then notify all interested parties in the existence of the data. This will allow, for example, the originating user's application to automatically display the results upon receipt.

This model of operation is common within NicheRMS installations; for example, existing NicheRMS Livescan integrations operate in a similar way.

The breath test result data can be stored within dedicated elements in the NicheRMS intox data model, as a simple "response page" of text, or both. This will be determined through joint functional analysis between Niche and NYSP.

Assumptions

The design specified above is dependent on the following integration-specific assumptions.

- Breath test requests (issued by NicheRMS) and responses (issued by the breath test instruments) are written to a network file share that is available to the NicheRMS application server layer, as opposed to being directly connected to a laptop running NicheRMS.
- Breath test responses can be attributed to a particular request, via the use of a Niche-provided unique correlation ID. For example:
 - The response file name should include the unique ID
 - The response should be put into a folder whose name reflects the unique ID
- Processed breath test responses can be moved to a "processed" or "success" folder upon processing by the integration, so they are not repeatedly scanned by the integration.

If these assumptions do not hold, the solution details will differ from what we have specified.

For more information regarding NicheRMS integration, including general assumptions and best practices, please see our response to [Requirement I23](#) on page 46.

Req Status	Requirement I23: Interface Development Tools	Offered	Not Offered
D	The proposed solution should provide NYS staff the ability to develop and modify interfaces without requiring contractor services.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Description:

It is anticipated that any modern RMS with regular support and maintenance will have a productive lifespan of many years. Considering this, and its high level of interconnectivity, there will be a need to develop and modify existing and future interfaces as the integrated systems change over time. The contractor should describe any interface development tools, methods and procedures that will be made available to NYS staff, including technical skill sets required to use them, and the contractor’s approach to supporting NYS-authored interfaces.

Provide a comprehensive description of how the proposed solution satisfies the requirement including technical specifications, capabilities, features, considerations, constraints, and limitations. Reference additional pages, if necessary.

Interfaces and Integrations with NicheRMS

Niche Technology will provide all of the NYSP interfaces, mandatory and desired, described in this section at no additional cost. The development and support of each interface is included in our proposed project plan and we fully expect that over the years the NYSP, like all of our clients, will have additional, evolving integration and interface needs. We are confident that we can provide these interfaces and integrations because NicheRMS comes with a standard set of very robust and continuously evolving tools that make integration work easy.

Unlike most RMS vendors, Niche Technology provides a robust interface toolkit used by our own developers, partners and customers to develop all of our integrations. The toolkit provides the necessary documentation and program samples to build interfaces to the application layer in any Windows or .NET language and provides APIs for accessing the Niche metadata (data model).

Niche supports configurable and fully extensible web services that can be used to build interfaces from any platform using functions that correspond to the most common NicheRMS functions, such as search and data retrieval operations. Niche also provides a web-accessible test environment, configured identical to the agency’s target system, allowing developers to work independently and not having to rely on access to an agency-supplied NicheRMS test system.

In addition to integrations with other systems, the interface toolkit also includes all of the components necessary to build robust *publish interfaces* that can react to changes in the NicheRMS data and publish these changes to an external system

Every NicheRMS project requires interfaces and integrations with other systems, and we have a proven, standard approach for providing reliable interfaces in a cost-effective way.

Niche's approach to interface development

Effective integration is critical for efficient agency-wide processes, such as minimizing repetitious data entry and maximizing ease of use, quality and efficiency.

Niche Technology develops, supports and maintains some interfaces at zero cost. Interfaces developed as NicheRMS out-of-the-box interfaces are available to other agencies without charge, *e.g.*, interfaces to CAD systems, *etc.* We do not license these interfaces separately. Third parties may license their part of the interface. We are committed to providing and maintaining these interfaces for the duration of any agreement made with a customer.

We also have extensive experience working with police agencies and third party developers to develop and deploy interfaces to NicheRMS. To assist with this, we provide a NicheRMS Interface toolkit as part of the base software package. It is delivered as a standard part of the NicheRMS system (*i.e.*, no additional cost). It is designed to support development of interfaces to local systems that an agency may require. If an agency does not have its own in-house developers, we support third-party developers or other implementation partners in creating interfaces to NicheRMS. Niche reviews and/or writes queries to extend NicheRMS interface functionality when necessary, and provides support via e-mail, phone and web conferences.

As further support for third-party developers who are creating interfaces to NicheRMS, we provide a web-accessible NicheRMS test system, configured like the agency's target system. This allows the developers to do their work from their development offices instead of relying on access to an agency-supplied NicheRMS test system.

In some cases, a hybrid approach is used, where we develop the NicheRMS facing side of an interface and customer IT staff or third party developers develop the target system facing side of the interface. Because each party deals primarily with the system that they understand, have access to, and may be able to modify if required, this approach can be very effective.

In addition, NicheRMS use a standard relational database that can be accessed by BI and crime analysis tools. This data is all available for reporting using the ILP/Analytics tools provided within NicheRMS, by exporting this data to third-party analytical packages. Our existing customers are using a wide range of third-party tools to provide analytical and reporting outputs from NicheRMS data: these include the i2, Business Objects, Cognos tools and Palantir.

Interface options

NicheRMS has a highly functional and flexible interfacing capability that can be used to create interfaces with third-party systems and applications. There are several different ways in which systems can exchange data with NicheRMS in real or near real-time.

Interface classifications

The fundamental classifications are (always from the point of view of NicheRMS):

1. An outgoing “push” interface where NicheRMS sends its data to the other system. A push interface may be automatically triggered by changes to NicheRMS data or may be manually triggered by a user action. Example: an interface that sends a Filing package to a Prosecution system.
2. An outgoing “pull” interface, where the interfaced system requests data from NicheRMS, usually to satisfy a request from one of its users. Example: a CAD system interface used to provide CAD users with person or location details held by NicheRMS.
3. An incoming “pull” interface, where NicheRMS requests data from the interfaced system. Example: An interface that queries NLETS or other information exchange system.
4. An incoming “push” interface, where the interfaced system sends data to NicheRMS based on its own internal trigger mechanism. Example: A CAD interface that sends open and/or completed CAD events to NicheRMS.

Niche supports numerous varieties of all of these types of interfaces in production at many different customer sites.

Types of interfaces supported

Interfaces can be set up to perform any action that a user can. Specifically, interfaces can be in any of these forms:

- A **Web Service client** that accesses NicheRMS via Niche-supplied Web Service.
 - We provide a standard SOAP-based web service that includes a set of commonly used methods that are suitable for most interfaces. The web service is easily extensible by Niche, by the agency or by third-party developers, if necessary, to provide additional services.
 - The web service is pre-configured with standard search and data retrieval functions and can be extended (by Niche or a third-party) to provide access to all NicheRMS functionality.
 - This web service can be integrated with enterprise service bus components.
- **XML interfaces:** NicheRMS uses XML extensively for interfaces with other systems.

- **A Niche-supplied API** can be used to access the NDS application servers over a TCP/IP connection. This approach provides maximum flexibility and performance but results in more coupling between the interface and NicheRMS. This interface-building approach has been used by Niche, customer agencies, and third parties. API bindings for C/C++ and .NET are available.
- **.NET client plug-ins** that interact locally with the desktop/mobile client application and have full access to NicheRMS facilities as well. Some agencies have used client plug-in functionality to build interfaces that provide interactive simultaneous access to NicheRMS and other systems, include legacy systems as part of migration.
- **Direct backend database access to the separate reporting database** – this is used for some statistical reporting processes, ETL processes and other bulk data extracts. This access is always read-only and normally through database views that are configured to provide security (e.g., excluding data filtered out by ACLs) and reduce coupling to the underlying NicheRMS database. Direct backend database access is performed against the separate reporting database to ensure interactive performance of the production NicheRMS application database is not affected.

Interface toolkit

Niche's Interface Toolkit provides the necessary DLLs, documentation and sample programs (in source code form) to build interfaces to the application layer (NDS) in any Windows language (using the "extern C" calling sequence) or in any .NET language (.NET-specific APIs) and to the client app using any .NET language. It also provides APIs for accessing the Niche metadata (data model).

We also support a configurable, extensible Web service that can be used to build interfaces from any platform. Niche supplies a supported set of Web service functions that correspond to the common search and data retrieval operations performed by the client app. Additional Web service functions can be added as required by Niche, the customer or a third party.

Whenever the interfacing facilities are extended or there are customer or third-party questions regarding interfacing, the Interface Toolkit is extended so that the new features and enhanced documentation is available to all interface developers.

Knowledge required to develop NicheRMS interfaces

Interface development requires knowledge of:

- C++ and/or C#
- SQL knowledge
- Microsoft .Net tool familiarity including Visual Studio
- For interfaces using XML, XSLT for transformations
- Developers need to be well briefed on the NicheRMS data model and the Niche tools.

Data publish interface

The Interface Toolkit includes the components required to build a robust *publish interface*. This is an interface that reacts to changes in the NicheRMS data and publishes the changes to the interfaced system. A typical application is to mirror information from NicheRMS to a central state or national repository for investigative or other purposes. The publish interface implements the following features:

- Database triggers that queue data for publishing or deletion when it changes in the NicheRMS database. The triggers are automatically generated based on a set of parameters that specify which data is to be tracked and how the data changes are to be aggregated for each interface. For example, a particular interface may consider a change to a person's address to be a change to the person, so the trigger would behave accordingly and queue the person record for publishing when the address changes.
- A queue and queue reader that combine multiple publish requests for the same record into a single request. The publish process is normally configured with a five-minute delay to allow time for multiple repeat requests to appear in the queue so that they can be combined.
- An extract process that takes the data in the database corresponding to the queued publish requests and transforms it into the form required by the remote system.
- A comparison process that tracks published data (in the form of a hash of the published field values) so that data that has not changed is not re-published.
- The actual publish process that interacts with the remote system, typically through Web service calls.
- A slow crawl process that works its way through the NicheRMS database and attempts to publish every record. The comparison process discards any attempts to re-publish already-published information.
- The Niche data publish components in the Interface Toolkit are used by Niche developers to build a functioning data publisher capable of reacting to customer-specified changes in the NicheRMS database. Either Niche developers, or customer or third-party developers can complete the development of a fully-functioning publish interface by adding the necessary publish command generation, data transformation and communications features to the software.

The slow crawl also un-publishes published information that is no longer available for publishing, assuming the target system supports removal of published information. This is very important as it allows data to be un-published even if no changes have occurred in the database. Some reasons that data might have to be un-published include passing a non-disclosure date or changes to the NicheRMS security roles that make a record that was previously visible to the publishing process invisible, and therefore not for publication. The slow crawl can also be used to perform the initial publish for a new interface.

Developers who need to build a publish-style interface have the benefit of getting all of these features without doing additional work. The main development task is to define the transformation of the NicheRMS data into the form required by the target system and to transfer the data to that system.

Information exchange protocols

NicheRMS can support essentially any data exchange method or protocol. Most modern interfaces are Web service-based and use XML as the low-level data format. Niche prefers to use broadly adopted standards such as NIEM to help with interface and code reuse. However, other standards are also supported, such as NIST for interfacing with LiveScan systems.

Information exchange with other systems via file sharing is not significantly different than the interface development described above. The same tools, processes, development roles, *etc.* are used no matter what the actual data transport process is. An example of a NicheRMS interface that is often file-based is the CAD interface (CAD data to NicheRMS).

The content of the files is usually XML, NIST or some other key/value pair format, CSV or a fixed width column file format. Most NicheRMS interfaces contain a stage where the data is put in XML format. This allows XSLT and other transformation tools to be used to perform any data translations independent of the actual file format.

The actual file transfer usually takes place via a Windows (or other) file share, or via FTP. In some cases, there is a specific protocol with data and trigger files to establish two-way communication through file shares. LiveScan interfaces use this approach.

Collaboration with trusted partners

There are multiple ways to exchange information with trusted partners/external organizations. They can be provided with access to NicheRMS data in a manner that preserves the integrity of data. The method chosen depends on who needs to access the data, and for what purpose.

- **Reports.** If a well-defined set of data needs to be supplied to an external organization or system, we can help you develop a query to extract and format the data for export. The resulting information can be formatted for export, for example:
 - Custom XSLT report used to extract data to an Excel CSV file.
 - Generation of a read-only PDF or a data file suitable for import into another system.
 - The reporting process can be automated to generate reports according to a daily, weekly or monthly schedule.
- **Interfaces.** For more intensive exchanges of data, an interface can be developed. We can assist with development of required interfaces, for example many agencies use client plug-ins to exchange data or a data publish interface to provide standard sub-sets of information to other systems. Individual customers have also developed their own interfaces to other local systems.

- **Login access.** A police agency can provide controlled access via logins for partner organizations. If there are individual members of other organizations who need regular or occasional access to a subset of police data, they can be provided with read-only access to that data, using the standard NicheRMS application via Web browser or virtual client such as Citrix.

This option makes use of the same NicheRMS RBAC and ACL security as for police officers accessing the system: roles and ACLs are set up that will determine what the trusted partners are allowed to see and do in the system. For example, users in a Probation office can be set up with roles and access that allow them to view certain cases. Note there are no additional licensing fees for this.

The Niche system has an inherent ability to exchange information with appropriate security levels with the correct organizations, whether they are organizations internal to the agency or organizations that support the police within the criminal justice arena. For security reasons, all access to the Niche database is negotiated via the security provided by Niche's NDS middleware, so that people and organizations can only access the data for which they have been authorized.

Receiving information from external organizations

Similar options are available for information being received from external sources. Again, the method chosen depends what information is being provided, and how it is being provided. For example, an external report can be uploaded as an external document and linked to a NicheRMS database record. Where the necessary interfaces are in place, external systems may be able to update NicheRMS records directly, e.g., court results received via interface.

Sharing data between NicheRMS agencies

Another option is for two or more police organizations to share data. This can be set up between two separate NicheRMS installations (or between separate police agencies sharing a single NicheRMS installation). This model is being used with great success in both Canada and the UK.

Limiting the performance impact of NicheRMS integrations

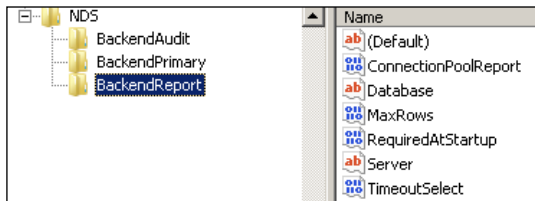
NicheRMS provides a "reporting server" infrastructure to allow heavy querying NicheRMS data without affecting interactive performance in the operational system.

Specifically:

- Each NicheRMS application server instance is capable of accessing one or more secondary read only databases. The NYSP project has been sized to include at least one read only reporting database that will be used for a variety of purposes.
- Secondary databases are maintained through standard mechanisms, such as transactional replication, SQL Server's AlwaysOn availability group functionality, SAN snapshot, or periodic reseeding from backup. Niche provides automated mechanisms to

generate transactional publications and subscriptions, as well as documentation and expert support regarding the use of other mechanisms for maintaining secondary databases.

- This use of secondary read only databases allows reporting queries to execute outside of the primary application database server, effectively eliminating the impact of the queries on the operational system.
- Each of these application server "back ends" are configured with their own row limit and timeout thresholds. That is, customers can allow reports to run for a longer period of time and return a larger volume of data on a secondary back end than they allow the same report to run for on the primary database.



This means that "reporting server" facilities are available to all development built against the NicheRMS application layer, whether they are:

- Uses of the NicheRMS web services
- New "loadable functions" within the NicheRMS web services
- NicheRMS output reports
- NicheRMS application plugins
- Direct integrations against the NicheRMS application server

This has substantial benefits over the direct use of reporting databases, because integrations can continue to leverage the core NicheRMS application layer facilities, such as:

- Security (authentication, role-based access control, audit, ACL, *etc.*)
- Business logic (data validation, compound business transactions, workflow, *etc.*)
- Data transformation and retrieval

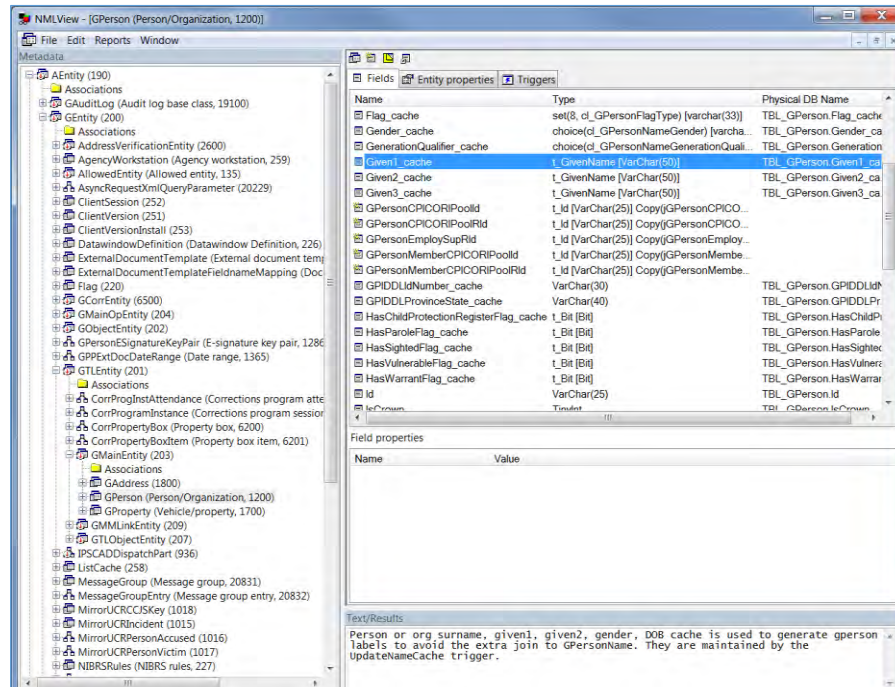
Support for database-level NicheRMS reporting and ETL

NicheRMS uses a common commercial relational database (SQL Server) from which data can be exported into an Operational Data Store. ETL of NicheRMS data into the customer's data store is implemented and managed by the customer, with support

provided by NicheRMS technical staff on an as-needed basis at no added cost. Notably, NicheRMS provides a suite of features that encourage efficient design and maintenance of ETL processes.

NicheRMS Database-level Reporting And ETL Features

- **Scalability and performance:** NicheRMS production sites include one or more read-only replicas of the central NicheRMS database that can be used by read-heavy tasks such as data warehouse refreshes and analytical reporting. These replica databases are maintained via transactional replication, AlwaysOn replication, or alternate customer-specified methods. NicheRMS supports users of transactional replication by providing a programmatic process to generate and maintain the transactional publication, its articles, and any downstream subscriptions that are defined against the publication.
- **Developer features:** NicheRMS provides a variety of features that streamline database-level ETL and reporting tasks. For example:
 - The NicheRMS data model viewer (NMLView) provides a graphical mapping of the object-oriented NicheRMS application layer data to the schema used by the NicheRMS relational database.



- NicheRMS includes tools that can generate various database-centric artifacts from the application data model. This includes, but is not limited to:
 - Mappings of "code" values to user-readable values, e.g., RES → Residence, freeing customer developers from having to manage these mappings on their own.
 - Schemas that are suitable for diagramming via Visio and other schema diagramming tools.
 - XSLT-style mappings of "code" data into the customer's specified set of values.
 - SQL scripts that can obfuscate free text data in production database; this is often useful when volume testing ETL and reporting processes where sensitive data should not be exposed to development staff.
- NicheRMS includes an SQLCLR assembly that can be used to transform any Niche-specific data formats into formats that are more readily understood by downstream systems, e.g., transforming NicheRMS narrative text into plain text or HTML.
- **Security:** Database-level extract processes typically use dedicated users that read from secured read-only views rather than reading directly from NicheRMS database tables.
The view definitions are mechanically generated by the NicheRMS application server, and this process can be configured to generate custom filter conditions, such as excluding all data whose access is restricted by access control list (ACL).
- **Data change detection:** NicheRMS provides three core mechanisms for detecting NicheRMS data changes.
 - All tables include a row version/timestamp column that developers can use to determine whether data has changed, and these columns are often indexed to facilitate quicker and more frequent refreshes of downstream data stores. This is the simplest and most general purpose form of NicheRMS change detection, and as-such it is used with row deletion routines to support most processes that lack a near-real time requirement.
 - The NicheRMS data model supports the definition of T-SQL triggers that can be used to record the occurrence of specific categories of insert, update, and delete events. This provides a mechanism that developers (database or application level) can use to identify customer-defined types of changes in near real-time.

Further, because NicheRMS is implemented against a common commercial DBMS, customers may use their preferred change detection and reconciliation methods, such as Change Data Capture (CDC).

NicheRMS application layer reporting features

NicheRMS supplies a flexible report definition format as a standard platform element. Customers use the same report development tools that the Niche uses to develop reports for the COTS product. Development of NicheRMS output reports is a common customer-side activity within the NicheRMS customer base, and it is commonly carried out without assistance from Niche.

The NicheRMS report definition format consists of:

- A version control block that declares the report's identifier, its version, its developer, and the NicheRMS build configuration that the report was procedurally configured for.
- A sequence of Niche application SQL commands that retrieve data from the NicheRMS application server; use of the application server layer ensures uniform enforcement of security and business logic.
- An XSLT-based conversion of command results into the developer's required output format; NicheRMS data output reports have been used to produce HTML, XML, CSV, TXT, XAML, and other text-based formats.
- Optionally, a report parameter UI. Current output report parameter UIs are most often implemented using XAML, but an increasing number are defined using Niche USL, a platform-agnostic language that is converted to the application's target platform at runtime.

The following is an example of a NicheRMS output report produced by the Ontario Provincial Police.



The features of the report format are as follows:

- It can be used for both per-record reports and for briefing/analytical/performance reports.
- Report output may be printed, emailed, saved to disk, included within case file assemblies, and used for various other purposes.
- As a standard platform element, it is understood by NicheRMS end user applications, the application server, utility processes, external system interfaces, and application-level plugins. That is, knowledge of the format is reusable across multiple technical areas.
- NicheRMS output reports can be automatically executed by a report-execution utility that is delivered with NicheRMS. This is primarily used to generate daily briefing reports and other performance-based reports.

- Output can contain embedded hyperlinks that allow users to "drill down" into the records referenced within the report, navigating back into the native view of the record within NicheRMS

Customers install report definitions as configuration items within the central NicheRMS database, and individual report definitions can be configured to require specific RBAC permissions to preview, print, email, or save to file.

NicheRMS includes a report editing and preview tool that can be used to define and test these report definitions without having to install the report into the application database and navigate through the end user application to an appropriate record.

```
<?xml version="1.0" encoding="Windows-1252" ?>
- <DATASETLIST xmlns:dt="urn:schemas-microsoft-com:datatypes">
- <DATASET entity="MAINOCCURRENCE">
- <ROW>
  <MainOccurrence__Id dt:type="string"
    dt:maxLength="25">9030011100000000278033</MainOccurrence__Id>
  <MainOccurrence__OccurrenceFileNoG dt:type="string"
    dt:maxLength="30">RM06000041</MainOccurrence__OccurrenceFileNoG>
  <MainOccurrence__OccurrenceStdOccTypeRid_L dt:type="string"
    dt:maxLength="255">Property
    Other</MainOccurrence__OccurrenceStdOccTypeRid_L>
```

Incident details	
Printed:	by 9999
Occurrence:	RM06000041
Incident details:	
Report no.:	RM06000041
Occurrence Type:	Property Other

This editing tool is supported by documentation in the "Developing for the Niche Platform" document set, which is available to all customers through the Niche SharePoint site. Documentation is further supplemented by video tutorials that describe the NicheRMS data model and the use of the NMLView metadata navigation tool.

NicheRMS interface development assumptions and best practices

Interfaces must be clearly specified by customers to ensure accurate coding. The customer must provide system definitions, documentation and, where needed, access to allow Niche to communicate with the external system in the manner proposed.

To efficiently build an interface or other integration, Niche requires the following:

- A thorough interface specification, including any API calls, data formats, schemas, *etc.* This ensures that Niche developers are able to work from spec as much as possible, minimizing communication overhead.
- Contact with technical personnel who understand the interface requirements. This ensures that Niche developers are able to work from spec as much as possible, minimizing communication overhead.
- A large volume of representative non-production test data that can be sent to Niche.
- Access to a test system that can be accessed remotely from the Niche development office.
- Customer personnel to verify and test the interface to ensure that it conforms to customer requirements.

When these prerequisites are met, the result is an efficient and predictable development cycle that helps keep customers on schedule and on budget. Because of this and the fact that NicheRMS implementation projects are initiated by very motivated customers, our interface specifications and time estimates are written with the assumption that our prerequisites will be met.

However, we recognize that each site is unique, and may have trouble meeting all of these prerequisites due to external factors. In these cases, Niche is flexible in working around and within the customer constraints, with the caveat that any inefficiencies may affect delivery timing.