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Inform RMS Web

SAFE Publisher

CRISP, CO

Operational Scenario 1.3

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VERSIONING INFORMATION

Date	Changed By	Version Notes
09/11/2019	Douglas Burger	1.0 – Creation
09/18/2019	Douglas Burger	1.1 – Person export trigger is a menu item Item import is filtered
11/09/2019	Douglas Burger	1.2 – Person export trigger is automatic on modification of Incident Report Person record. The mergePeople API is used to merge records when MNI is assigned.
12/28/2019	Douglas Burger	1.3 – The Interface does no Item and Property processing. Interface is a one-way Person publisher. Persons are updated in SAFE in reaction to modification events during report data entry. Configuration items are explained.

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1 DESCRIPTION

Larimer County, CO, as a member of the Combined Regional Information Systems Project (CRISP) desires an interface (the “Publisher”) that publishes person information to SAFE evidence tracking software implemented by Tracker Products. This integration is designed to support continuing evidence and asset management in SAFE.

The Publisher primarily consists of a publisher component integrated into the Tritech Publisher Framework that uploads person data in JSON format to an Web API endpoint. This endpoint is hosted by the Tracker Products SAFE evidence and asset management product.

Export From:	Inform RMS Web
Module:	Incident
Import Into:	Tracker Products SAFE
Data Contents:	Person Data
Data Transfer Medium:	Web RESTful API
File Format:	JSON syntax, Tracker-defined schema
Action Trigger:	Data modification of Report Person

2 OVERVIEW

Laramer County is responsible for the Inform RMS instance and manages the incident with person data hosted by that system. As each incident report person record is modified, the Interface exports the person data and case number to SAFE for ongoing data entry of property in that system.

It should be noted that Inform RMS Web maintains two kinds of records: Reports and Summaries. In effect, these are two versions of the same report. A “Report” is the data record containing a report, which may be in the process of review. When the review is completed, this record becomes read-only and represents the initial version of the report. Upon completion, a summary version is created that allows an RMS user to continue working with and make changes to the record. Additional supplemental reports (with the same report number) would accumulate their data in the same summary record. The Publisher publishes the Report’s person record as it is modified. In effect, the Interface acts on the person data of an incident during the initial data entry process.

2.1 ASSUMPTIONS

1. Inform RMS Web has been implemented prior to the delivery of the interface.
2. No modifications to existing TriTech products or database will be required for this interface.
3. A data entry template is defined in RMS providing for all the necessary fields required for successful acceptance by the SAFE system.
4. The Publisher resides on a conventional or virtualized server platform as described in the TriTech System Planning Document

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2.1.1 CentralSquare Responsibilities

1. CentralSquare will complete the remote installation and support of the interface.
2. CentralSquare will configure the interface as required to operate in the Client environment.
3. CentralSquare will provide an overview of the operation and monitoring of the Publisher to specified client personnel.

2.1.2 Client Responsibilities

1. The client is responsible for obtaining the appropriate services and access to Tracker Products SAFE.
2. The Client is responsible for the integrity of the data being submitted via the Publisher.
3. The Client will provide a secure, reliable connection that has been properly configured to operate this Publisher.
 - a. A TCP/IP connection between the Publisher host machine and the Inform RMS application server, primarily using the HTTP protocol;
 - b. A TCP/IP connection between the Publisher host machine and the SAFE API service, primarily using the HTTP protocol secured by TLS and API access tokens.
4. The Client will obtain and provide access credentials and API tokens necessary for uploading person data to the SAFE Web API.

3 DETAILS

3.1 ARCHITECTURE

The Tritech Publisher Framework, of which this Publisher is a component, is a .NET 4.6.2 Windows™ Service that upon receiving incident report person modification events from RMS will read the person data for submission to SAFE. Each person is submitted to SAFE via the Web API.

3.2 SOFTWARE

The following specifies the software that will be required to run the Publisher:

1. Operating System – Windows Server 2012 or later;
2. Microsoft .NET Framework 4.6.2 or later;
3. Internet Information Services feature;
4. Microsoft SQL Server 2008 R2 or later, Express, Standard, or Enterprise Edition.

The following lists the third-party external software components that CentralSquare software relies on to function.

1. FTP client application: WinSCP
 - a. <https://winscp.net/eng/index.php>
2. Messaging service: RabbitMQ
 - a. <https://www.rabbitmq.com/>
3. Messaging service host: Erlang/Open Telecom Platform
 - a. <http://www.erlang.org/>

3.3 WORKFLOWS

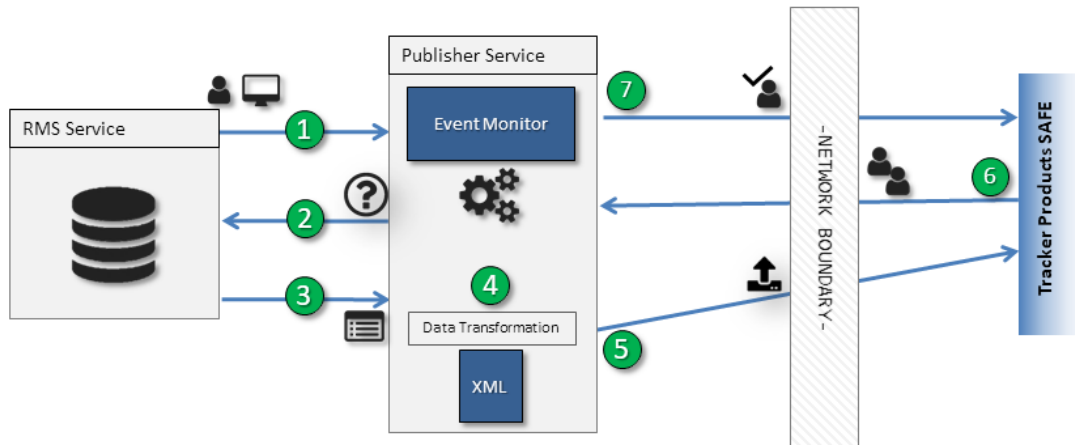


Figure 1 Tracker SAFE Publishing Workflow

1. Inform RMS emits an event signaling that data has been modified on a person section or that an Incident Report has transferred to a Summary.
 - a. During data entry, the RMS user is prompted with potential master name matches. The user can select the desired record and attach the Master Person Identifier in the report at that time.
 - b. If the Master Person Identifier is not selected during Report entry, one is assigned to the Summary when the Report transfers. When an Incident Report transfers to a Summary, all persons on the report are processed as a modification. This provides that a master name link assigned during the transfer process will be populated as "user-data" in SAFE.
2. The Publisher responds by requesting the Incident Report data from Inform RMS.
3. Inform RMS returns the Report data to the Publisher
4. The Publisher transforms and packages the Incident person data into a JSON-syntax document formatted according to the API specification of SAFE.
 - a. The kinds of persons on the report may be filtered by configuration options. Three options are provided to allow or prevent publishing the Suspect, Victim, or Other Persons Involved records on the report.
5. The Publisher queries the person data using API RESTful API instructions to search persons by its "user-data" value in SAFE which identifies the person in RMS. Two search queries may be sent, one for the Report Person Identifier and one for the Master Person Id (if assigned). With these queries, the Publisher can discover if a SAFE record already exists that corresponds with the RMS person being exported.
 - a. A person identifier or Master Person Id is transmitted as a custom "user data"¹ field to be retained by the SAFE software for synchronizing the record on each side.

¹ "User data" is a term denoting data that a system's user (in this case, the Interface) owns and maintains. It is a field of custom information expected to be stored and maintained by the system (in this case, SAFE) along with the record's application data. The Interface makes use of this data for reconciling duplicate person candidates.

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- b. A user-data field is defined in SAFE with a custom form and a custom text field defined on the form. The form and field names are configuration options for the Interface.
- 6. SAFE returns the results of the person queries for inspection by the Publisher.
- 7. The Interface compares the “user data” provided by SAFE to the identifying data on the person it is submitting.
 - a. The Interface will create a case in SAFE, if needed, using the case number on the Incident Report.
 - i. To satisfy the SAFE requirement that a case officer is provided, the Interface will look up in SAFE the user who corresponds with the RMS officer listed in the officer section as Reporting involvement type. The correspondence will be determined by concatenating the RMS login ID with the domain portion of the user’s email address to match with the email address of a SAFE user. For example, if RMS user login sjones has an email in RMS of samuel.jones@co.state.us, the Tracker look-up will be performed with sjones@co.state.us. The involvement type is a configuration option. Note that an officer must be entered early on the report so that the Interface is able to create a case associated with the persons on the report.
 - ii. To satisfy the SAFE requirement that an Offense Type is provided, the Interface will provide a “Not Specified” code define in SAFE for this purpose. The code value provided by the Interface will be a configuration option.
 - iii. For Other Involved Persons, the Interface attempts to map the Involvement Type code to the SAFE Person Type code. If the mapping cannot be determined, the Person Type of the Other person on the case is set to Unknown. A configurable mapping table is provided for this purpose.
 - iv. The minimum data necessary for the Interface to create a case are:
 - 1. Case Number
 - 2. Case Officer – the email query must resolve to a user in SAFE
 - 3. Offense Type – the Offense Type value in the Interface configuration must resolved to an Offense Type in SAFE
 - b. If no SAFE record is found with the queries, the Interface will submit an insert request that adds the person as a new record in SAFE using the POST `people/postDuplicate` API. The Report Person Identifier or the Master Person Identifier is provided as user-data. The case number will be associated with the newly created person record using the `addpersontocase` API.
 - c. If one SAFE record is found, the Interface will submit an update request to update the selected person record in SAFE using the PUT `people/putDuplicate` API. If the RMS person record has a Master Person Identifier, this is updated on the user-data in SAFE.
 - d. If two SAFE records are found, this means that the RMS person record had been previously added to SAFE without a Master Person Identifier, and the Master Person Identifier was assigned to it which already exists in SAFE. The Interface will:
 - i. Merge the two SAFE person records using the POST `mergePeople` API where:
 - 1. The record having the Person Record Identifier is the source; and,
 - 2. The record having the Master Person Identifier is the target.

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- ii. Update the SAFE record having the Master Person Identifier using the PUT people API.
- e. The person's address is synchronized to the default address on the SAFE person record. If there is no SAFE default address, the Interface adds a new address and makes it the default. Because the merge process copies over the addresses from the source to the target person, there exists the potential for addresses to be duplicated by being entered for the "same" person on two reports, The Interface will check for any addresses that duplicate the default address and delete any that exist.

3.3.1 Person Correspondence

To minimize the amount of data cleanup that must be performed in SAFE due to duplicate person records, the Interface tracks multiple identifying fields of the RMS person in multiple corresponding records. This is necessary because persons must be submitted to SAFE before the report is approved and the person does not gain a Master Name link on his first entry into RMS until after the report is approved.

A person record in RMS can have three identifiers associated with it that the Interface uses to reconcile Incident persons with a person record stored in SAFE.

1. Report Person Identifier – a GUID value² that identifies the person record in the RMS database. When an Incident person is entered for the first time on a Report, this value is the only identifying value available to the Interface. Each time the same person is entered on a new incident, he will gain a new Report Person Identifier (but the same Master Person Identifier. See below.)
2. Summary Person Identifier – a GUID value that identifies the corresponding person record after the report transfers to a Summary. As with the Report Person Identifier, every new Summary has a unique identifier for the "same" person.
3. Master Person Identifier – a numeric value that links the person record to a Master Name record in the RMS Master Index tables. This is also known as Master Name Index (MNI).
 - a. When a person is first entered into the system (without a Master Name record), a Master Person Identifier is not assigned until the Report is approved. Therefore, on the initial submission to SAFE, the Report Person Identifier is submitted as "user data".
 - b. When the Report is later approved, it transfers to a Summary and the person will gain:
 - i. A Summary Person Identifier for the corresponding record in the Summary
 - ii. A Master Person Identifier for the linked Master Name information.
 - c. When a person is entered a second time, the initial data entry will automatically create/update a person record in SAFE using the Report Person Identifier until the MNI is selected. Subsequent updates will either update the MNI on the SAFE person record if the MNI doesn't already exist, or will merge the initial created record with the existing MNI record in SAFE if the MNI already exists.

On any submission to SAFE, the "user data" of the persons can be queried in SAFE to discover if the person has been submitted to SAFE before.

² A GUID is an alphanumeric text string of 36 characters in length, e.g. E7060A67-A300-4F19-BF49-7CA3A0C143EC

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If the “user data” of a SAFE record matches any linked value of the person, the Interface submits the data as an update request, using the matching SAFE record identifier as the identifier for the update. If the Master Person Identifier has been assigned, this will be updated as the “user data” value of the SAFE record.

If the “user data” for the person is not found in SAFE, the Interface submits the data as an insert request. If the Master Person Identifier has been assigned, this will be provided as the “user data” value of the SAFE record.

The following scenarios summarize the insert/update behavior of the Interface against SAFE. On each modification of a Report Person Record, which has a Report Person Identifier and an optional Master Person Identifier, the Interface submits two queries to SAFE: one for the Report Person Identifier and one for the Master Person Identifier

Scenario	Behavior	API
Initial data entry of a new person	No MNI assigned for querying and no record found in SAFE with the Report Person Identifier	POST people (person 1)
Continual editing of a new report person	No MNI assigned for querying and one record found in SAFE with the Report Person Identifier	PUT people (person 1)
Report transfer to a Summary, and MNI is created for the new person.	One record is found in SAFE with the Report Person Identifier and no record is found with the MNI.	PUT people (person 1) The MNI replaces the Report Person Identifier on the SAFE user-data.
Initial data entry of a person’s second encounter	No MNI assigned for querying and no record found in SAFE with the Report Person Identifier	POST people (person 2)
Continual editing of the person in RMS, an MNI is assigned.	One record is found in SAFE with the Report Person Identifier (person 2) and one record is found with the MNI (person 1)	POST mergePeople (Source: person 2 Target: person 1) <i>Person 2 is deleted in SAFE</i> PUT people (person 1)
Continual editing of the person in RMS with the previously assigned MNI	No record is found in SAFE with the Report Person Identifier (person 2) and one record is found with the MNI (person 1)	PUT people (person 1)

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3.3.2 Configuration Item Summary

The following configuration items provide for control of the business logic of the Interface.

UserDataFormName – the name of the person custom form in SAFE containing the user-data field for querying by RMS key.

UserDataFieldName – the name of the field on the custom form in SAFE containing the user-data.

MobilePhoneCode – the Phone Type code in RMS that controls whether the value is stored in the MobilePhone field of a user in SAFE. Any code not this value is stored as the OtherPhone field.

CaseOffenseType – the Offense Type in SAFE that is provided for all new cases created by the Interface.

CaseOfficerInvolvementType – the RMS involvement type code of the Officer on the report that is selected as the Case Officer for new cases created by the Interface.

PublishSuspect, **PublishVictim**, **PublishOther** – true/false values that control whether persons of the indicated type are published from the Incident report.

3.4 SECURITY

Security for the Publisher will consist of the following:

1. Inform RMS Application credentials for reading data from RMS;
2. Windows credentials for service process operation, writing files in the filesystem, and accessing the Publisher machine SQL Server instance;
3. Tracker Products SAFE Web API access tokens.

Passwords stored by Publisher components are encrypted using the Microsoft Enhanced Cryptographic Provider which is FIPS 140-2 Level 1 compliant.

3.5 LOGGING

All interface components make use of Apache Logging Services™ provided in the Apache log4net™ framework.

In addition, the Publisher Framework logs its behavior for diagnostic purposes to its associated SQL Server database.

Logging can be configured to allow or filter messages according to the severity levels applied on each message. CentralSquare interface components use levels in the following way, but note that not all levels may be used by any particular Tritech software component. Each level also enables the level above it in priority.

Fatal – the application encountered a catastrophic condition and is likely terminating

Error – a critical application error; the code cannot finish the task as required

Warning – validation failures and non-critical errors; the code encountered an unusual condition from which it is recovering from or continuing on with diminished capacity

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Info – an informational message describing the normal expected behavior of the code

Debug – detailed execution information describing internal behavior of the code

Depending on the level being logged, each log event text can be written to a text file, the Windows Event Viewer, or sent via email to a configured address provided there is an SMTP server available.