National Search and Rescue Secretariat

Data Receiver API Quick Reference V2

Search and Rescue
Knowledge Management System

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Document change control

Revision Number	Date of Issue	Author(s)	Brief Description of Change
0.1	2014-07-16	Dean Verbrugghe	Creation of the document.
1.0	2015-02-25	David Warren	Updated document to clarify the data standards and update the WSDL and API definition
2.0	2016-03-28	Pat Labelle	Updated to include the REST API

1. Security Architecture

The SARKMS is a series of services for publishing and analyzing search and rescue data. The publishing services are referred to as the "SARKMS Data Receiver".   The SARKMS Data Receiver exposes a set of application programmer's interface (API) to allow stakeholder systems to publish SAR incidents to the SARKMS.

The publishing API's utilize the following web protocols:

- A Simple Object Access Protocol (SOAP) API over an HTTP transport
- A Representational State Transfer (REST) API

Both sets of protocols include the following security precautions:

- Credentials for access
- IP white listing
- Secure SSL communications
- Encryption of contents

1.1. The SARKMS Data Receiver SOAP API

The SARKMS Data Receiver SOAP API follows these steps when a transmission arrives:

1) Does the transmission come from an approved IP address? If not, discard the transmission.
2) Attempt to decrypt the message using the encryption key assigned to the IP address or Stakeholder ID the message came from. If the decrypt process does not produce syntactically correct XML DataPackage, discard the transmission.
3) Extract and check the stakeholder credentials embedded in the XML and see if they are assigned to the IP address that the message came from, if not … discard the transmission.
4) Security gateways are now passed … further processing can be done.

** NSS will provide the Encryption library as a .NET DLL file for use in building any tools that may access the SAR KMS API. Once the tools are built, credentials and IP whitelisting entries can be created.

1.1.1 Data Structure

The data being passed to the system is XML with utf-8 encoding. There is a sample data structure below, the key components of the structure are:

DataPackage – this is the root node of the XML, all other XML nodes fall inside this one. The receiving code expects to find a root node with this name and will reject the transmission if it is missing.

StakeHolderID – This is a value supplied by NSS to each individual stakeholder that supplies data to the system. Used to verify the identity of the data source.

Credentials – This node contains the password supplied by NSS to each individual stakeholder that supplies data to the system. Used to verify the identity of the data source.

Data – This is the parent node of the actual information supplied to the SAR KMS system. Once the identity of the sender has been verified, the contents of the Data node are extracted and go through the process of being loaded into the system. The contents of the Data node are very free-form, but there are a few standards we ask for that are outlined in the Data Standards section of the document.

```xml
<?xml version="1.0" encoding="utf-8"?>
<DataPackage>
  <StakeHolderID>MyStakeholderUserID</StakeHolderID>
  <Credentials>MyStakeholderPassword</Credentials>
  <Data>
    <SARIncident>
      <IncidentID>1AB254</IncidentID>
      <Province_English>Nunavut</Province_English>
      <Province_French>Nunavut</Province_French>
      <ReportingUnit_English>Nunavut Protection Services</ReportingUnit_English>
      <ReportingUnit_French> Services de protection Nunavut</ReportingUnit_French>
      <CaseNumber>315-635-004-13n</CaseNumber>
      <ContactPhone>867-975-5322</ContactPhone>
      <CompletedBy>Gary Gygax</CompletedBy>
      <Location>Coral Harbour</Location>
      <Latitude>64.1333</Latitude>
      <Longitude>-83.1667</Longitude>
      <PrimaryAlert_English>10 - Telephone - land line</PrimaryAlert_English>
      <PrimaryAlert_French>10 – Téléphone - ligne terrestre</PrimaryAlert_French>
      <DateOccured>2013-01-09T19:05:00Z</DateOccured>
      <DateNotified>2013-01-09T19:05:00Z</DateNotified>
      <DateResolved xsi:nil="true" />
      <NumInGroup xsi:nil="true" />
      <NumLost xsi:nil="true" />
      <IncidentDesc>Overdue hunter floe edge</IncidentDesc>
      <IsSearch>false</IsSearch>
      <IsRescue>false</IsRescue>
      <IsRecovery>false</IsRecovery>
      <IsEvidenceSearch>false</IsEvidenceSearch>
      <IsWeatherFactorInResponse>false</IsWeatherFactorInResponse>
      <CreatedOn>2013-06-18T13:15:00Z</CreatedOn>
      <UpdatedBy>Gary Gygax</UpdatedBy>
      <UpdatedOn>2013-06-18T16:14:00Z</UpdatedOn>
      <SARAuthority_English>Nunavut Protection Services</SARAuthority_English>
      <SARAuthority_French>Services de protection Nunavut</SARAuthority_French>
    </SARIncident>
```

```
<SARIncident>
  <IncidentID>1AB258</IncidentID>
  <Province_English>Nunavut</Province_English>
  <Province_French>Nunavut</Province_French>
  <ReportingUnit_English>Nunavut Protection Services</ReportingUnit_English>
  <ReportingUnit_French>Services de protection Nunavut</ReportingUnit_French>
  <CaseNumber>315-655-044-13n</CaseNumber>
  <ContactPhone>111-222-5555</ContactPhone>
  <CompletedBy>Roger Moore</CompletedBy>
  <Location>Coral Harbour</Location>
  <Latitude>64.1333</Latitude>
  <Longitude>-83.1667</Longitude>
  <PrimaryAlert_English>Commercial Beacon</PrimaryAlert_English>
  <PrimaryAlert_French>Radiobalise - Commercial</PrimaryAlert_French>
  <DateOccured>2013-04-01T14:20:00Z</DateOccured>
  <DateNotified>2013-04-01T14:20:00Z</DateNotified>
  <DateResolved xsi:nil="true" />
  <NumInGroup>2</NumInGroup>
  <NumLost xsi:nil="true" />
  <IncidentDesc>911 spot activation</IncidentDesc>
  <IsSearch>false</IsSearch>
  <IsRescue>false</IsRescue>
  <IsRecovery>false</IsRecovery>
  <IsEvidenceSearch>false</IsEvidenceSearch>
  <IsWeatherFactorInResponse>false</IsWeatherFactorInResponse>
  <CreatedOn>2013-06-18T15:02:00Z</CreatedOn>
  <UpdatedBy>Gary Gygax</UpdatedBy>
  <UpdatedOn>2013-06-18T16:42:00Z</UpdatedOn>
  <SARAuthority_English>Nunavut Protection Services </SARAuthority_English>
  <SARAuthority_French>Services de protection Nunavut</SARAuthority_French>
  </SARIncident>
  </Data>
</DataPackage>
```

1.1.2 Data Standards

The data supplied to the SARKMS needs to follow a few simple rules to be of value.

1. In order to ensure an efficient incremental data transfer, please only include *new* and *updated* records in each transmission. This is to ensure that old data is not processed with every transmission.
2. Multiple records may be sent in a single transmission, just separate them logically in the XML as seen in the example XML in this document. We recommend sending individual packets containing no more than 10 incidents each to ensure a successful transmission.
3. Each record should contain a unique identifier. This identifier is used to identify whether the data is for a new record or just an update to an existing record.
4. Each record should contain a location. The format of this location is in standard latitude and longitude decimal format with negative numbers indicating South and West directions respectively. The example XML contains this format.
5. Each record should contain a timestamp indicating the time that the record was last modified. In the sample XML this node is called UpdatedOn.
6. All dates should be in the ISO 8601 standard time format: YYYY-MM-DDThh:mm:ssZ as seen in the example XML. Z indicates UTC (Coordinated Universal Time) and all times should be supplied in this time zone.

7. If bilingual data is available, the data should be supplied in both English and French with tags named in such a way that it is obvious that the two tags are simply translations of the same value. The tag names themselves should be in English only. The example XML demonstrates an easy suffix tag naming convention that can be used.

1.1.3 API Structure

The Data Receiver API is a SOAP service over https. The WSDL for the development copy of this service is described below:

```
<wsdl:definitions name="DataReceiverService" targetNamespace="http://tempuri.org/"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/" xmlns:wsa10="http://www.w3.org/2005/08/addressing"
xmlns:wsx="http://schemas.xmlsoap.org/ws/2004/09/mex"
xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/" xmlns:wsu="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd"
xmlns:wsp="http://schemas.xmlsoap.org/ws/2004/09/policy"
xmlns:wsap="http://schemas.xmlsoap.org/ws/2004/08/addressing/policy"
xmlns:msc="http://schemas.microsoft.com/ws/2005/12/wsdl/contract"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl" xmlns:tns="http://tempuri.org/"
xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/">
    <wsdl:types>
        <xsd:schema targetNamespace="http://tempuri.org/Imports">
            <xsd:import schemaLocation="http://ttg-
devtest.tangotechnologygroup.com/DataReceiverService.svc?xsd=xsd0"
namespace="http://tempuri.org/"/>
            <xsd:import schemaLocation="http://ttg-
devtest.tangotechnologygroup.com/DataReceiverService.svc?xsd=xsd1"
namespace="http://schemas.microsoft.com/2003/10/Serialization/"/>
            <xsd:import schemaLocation="http://ttg-
devtest.tangotechnologygroup.com/DataReceiverService.svc?xsd=xsd2"
namespace="http://schemas.datacontract.org/2004/07/NSS_KMS_DataReceiverFileWatcher"/>
        </xsd:schema>
    </wsdl:types>
    <wsdl:message name="IDataReceiverService_CreateDataBatches_InputMessage">
        <wsdl:part name="parameters" element="tns:CreateDataBatches"/>
    </wsdl:message>
    <wsdl:message name="IDataReceiverService_CreateDataBatches_OutputMessage">
        <wsdl:part name="parameters" element="tns:CreateDataBatchesResponse"/>
    </wsdl:message>
    <wsdl:message name="IDataReceiverService_CreateDataBatchesForStakeholder_InputMessage">
        <wsdl:part name="parameters" element="tns:CreateDataBatchesForStakeholder"/>
    </wsdl:message>
    <wsdl:message name="IDataReceiverService_CreateDataBatchesForStakeholder_OutputMessage">
        <wsdl:part name="parameters"
element="tns:CreateDataBatchesForStakeholderResponse"/>
    </wsdl:message>
    <wsdl:portType name="IDataReceiverService">
        <wsdl:operation name="CreateDataBatches">
            <wsdl:input
wsaw:Action="http://tempuri.org/IDataReceiverService/CreateDataBatches"
message="tns:IDataReceiverService_CreateDataBatches_InputMessage"/>
            <wsdl:output
wsaw:Action="http://tempuri.org/IDataReceiverService/CreateDataBatchesResponse"
message="tns:IDataReceiverService_CreateDataBatches_OutputMessage"/>
        </wsdl:operation>
        <wsdl:operation name="CreateDataBatchesForStakeholder">
```

```
                        <wsdl:input
wsaw:Action="http://tempuri.org/IDataReceiverService/CreateDataBatchesForStakeholder"
message="tns:IDataReceiverService_CreateDataBatchesForStakeholder_InputMessage"/>
                        <wsdl:output
wsaw:Action="http://tempuri.org/IDataReceiverService/CreateDataBatchesForStakeholderResponse"
message="tns:IDataReceiverService_CreateDataBatchesForStakeholder_OutputMessage"/>
                    </wsdl:operation>
            </wsdl:portType>
            <wsdl:binding name="BasicHttpBinding_IDataReceiverService"
type="tns:IDataReceiverService">
                    <soap:binding transport="http://schemas.xmlsoap.org/soap/http"/>
                    <wsdl:operation name="CreateDataBatches">
                        <soap:operation
soapAction="http://tempuri.org/IDataReceiverService/CreateDataBatches" style="document"/>
                        <wsdl:input>
                                <soap:body use="literal"/>
                        </wsdl:input>
                        <wsdl:output>
                                <soap:body use="literal"/>
                        </wsdl:output>
                    </wsdl:operation>
                    <wsdl:operation name="CreateDataBatchesForStakeholder">
                        <soap:operation
soapAction="http://tempuri.org/IDataReceiverService/CreateDataBatchesForStakeholder"
style="document"/>
                        <wsdl:input>
                                <soap:body use="literal"/>
                        </wsdl:input>
                        <wsdl:output>
                                <soap:body use="literal"/>
                        </wsdl:output>
                    </wsdl:operation>
            </wsdl:binding>
            <wsdl:service name="DataReceiverService">
                    <wsdl:port name="BasicHttpBinding_IDataReceiverService"
binding="tns:BasicHttpBinding_IDataReceiverService">
                        <soap:address location="http://ttg-
devtest.tangotechnologygroup.com/DataReceiverService.svc"/>
                    </wsdl:port>
            </wsdl:service>
</wsdl:definitions>
```

This API exposes two web methods:

- **CreateDataBatches**
  - Accepts a single parameter named *EncryptedXML* that contains the raw string of encrypted XML to be processed.
  - Returns a *ResponseCode* enumerator that identifies whether the transmission is a success or failure. If the transmission is rejected the Response Code will identify what the problem was.
  - Stakeholder will be identified by their incoming IP address upon transmission.
  - This method should only be used if the data collector will be calling from a single IP address
- **CreateDataBatchesForStakeholder**
  - Accepts two parameters named *StakeholderID* and *EncryptedXML*. "StakeholderID" is a string used to identify the stakeholder who is sending the data. This should be the same value as provided in the "StakeHolderID" field in

the XML data package. "EncryptedXML" is the raw string of encrypted XML to be processed.
- o Returns a *ResponseCode* enumerator that identifies whether the transmission is a success or failure. If the transmission is rejected the Response Code will identify what the problem was.
- o Stakeholder will be identified by their Stakeholder ID that was provided in the "StakeholderID" parameter.
- o This method should be used if the data collector will be spread across multiple servers and IP addresses. *(Note - The external IP addresses of these servers will still need to be white-listed in order for the transmission to succeed)*

1.2. The SARKMS Data Receiver REST API

The SARKMS Data Receiver REST API follows these steps when a transmission arrives:

1) Does the transmission come from an approved IP address? If not, discard the transmission.
2) Extract and check the stakeholder credentials and see if they are assigned to the IP address that the message came from, if not … discard the transmission.
3) Security gateways are now passed … further processing can be done.

** Encryption of the content is not required; the encryption will be performed by the SSL tunnel.

1.2.1 Data Structure

The REST service is published as a POST to the following URI endpoint:

https://[SARKMS-SERVER]/API/REST/D4H/Statistics.svc/insert?stakeholder=[STAKEHOLDER]

[SARKMS-SERVER] – This is the URL for the SARKMS data receiver. This value will be supplied by NSS.

[STAKEHOLDER] – This is a value supplied by NSS to each individual stakeholder that supplies data to the system. Used to verify the identity of the data source.

The data being POSTED to the system is a valid JSON document:

```
{
        "data": {
                "Org": "Calgary Search and Rescue Association",
                "IncNum": "04649",
                "MisNum": "S2015-342",
                "IncDate": "2015-03-02 09:30:00",
                "endDate": "2015-03-02 14:50:00",
                "State": "Alberta",
                .
                .
        }
}
```

The JSON document contains one "data" object which includes any number of name value pairs for the transmitted data. Once the identity of the sender has been verified, the contents of the

Data object are extracted and go through the process of being loaded into the system. The contents of the Data object are very free-form and loosely follow the ISRID standards for naming convention and data content.

The service will return the following HTTP codes:

200 :   Stakeholder valid, JSON valid

400 :   Malformed content (ie: bad JSON or missing stakeholder)

403 :   Bad Stakeholder

404 :   Bad endpoint

405 :   Bad calling convention

1.2.2 Data Standards

The data supplied to the SARKMS needs to follow a few simple rules to be of value.

1. In order to ensure an efficient incremental data transfer, please only include *new* and *updated* records in each transmission. This is to ensure that old data is not processed with every transmission.
2. Only one record may be sent in a single transmission
3. Each record should contain a unique identifier. This identifier is used to identify whether the data is for a new record or just an update to an existing record.
4. Each record should contain a location. The format of this location is in standard latitude and longitude decimal format with negative numbers indicating South and West directions respectively.
5. Any amount of name / value pairs can be included in the data object. Each name / value pair in the data object should (when possible) utilize the "Name" column as the parameter name in the following table. If the following table does not include a name/value pair required, please create a new pair.

Name	Brief Description	Description
Source	Data Source	Data Source: Enter the agency that provided the data. The First two letters represent the country. If additional data exists use a dash and two more letters for state or province.

Name	Brief Description	Description
Key	Key#	Key#: Data source plus sequential number of data source. This field is only edited by ISRID data manager
Unit	Unit Type	Unit Type: Field used to display either English or Metric measurements. It is not so much a field as a key to how other fields are displayed. The actual ISRID datebase is all converted to metric.
IncStat	Incident Status	Incident Status: An incident may still be ongoing (Active), Closed, or suspended. Suspended incidents are listed as Open. In the event the subject is later located after the incident was suspended please use the Open to Closed choice.
Lead	Lead Agency	Lead Agency: Name the agency that had lead legal responsibility. More than one agency may be entered.
IncNum	Incident #	Incident #: Some jurisdictions issue both an incident number and a mission number. If a separate incident number is issued, enter it here.
MisNum	Mission #	Mission #: In many cases several mission numbers may be issued to an incident. Use the mission number that is used the most throughout the data being entered. In many cases a mission number may not exist. This field will eventually become a hidden field since some mission numbers are the subject's name.
IncDate	Incident Date	Incident Date: Enter the date the incident occurred. This field exists on many data forms but usually reflects when an official incident began. This may be different than the date the person became lost. The date/time the person was last seen should be recorded in a seperate column. ISRID only shows notification time, search time, and Total time lost which are calcuated

Name	Brief Description	Description
		from date/time last seen, date/time search began, and date/time found.
IncTimeRp	Incident Time	
Prepared	Mission Contact/Prepared by	Mission Contact: Enter the name of the person who completed the data form. In many cases this may be the IC.
Org	Organization/Agency	
Email	E-mail Address	
Phone	Phone #	Mission Contact #: List the phone number(s) of the mission contact or list the email address.
IncTyp	Incident Type	Incident Type: Enter the general type of incident. Choices include; Search (land based for missing person), Rescue (land based for known location of person), Aircraft (search, rescue, or recovery of Aircraft), Beacon (search for electronic signal), Water (person or craft in water, includes searches, rescues, and recoverys), Recovery (land mission to a known location to retrieve a known fatality), training, disaster, Fugutive, False Report, Standby (general standby, if medical care given classed as a rescue), Attempt to Locate (search for a non-missing person to deliver a message), Cave (below ground rescue or search), Evidence (SAR resources used to collect or look for criminial case evidence). Field is important since only data from searches will be used for missing person statistical models.
IncEnv	Incident Environment	Incident Environment: Is the incident primarily taking place on land, water, orginated from the air, or occurred underground (cave). All missing aircraft/unpowered flight incidents are considered air regardless of ending up on land or in water. Underwater cave incidents are considered water if the intent was to go underwater with diving

Name	Brief Description	Description
		equipment.
CtyReg	County or Region	County: Enter the county the incident acutally occurred. If a county does not exist (Not USA) then enter the jurisdiction region. This field is used to determine EcoRegion.
State	State/Province	State/Province: In most cases the state or province will be implicit in the header or source of form. The field is included since states/provinces often provide mutual aid to other states.
PrimeArea	Response Area	Response Area: This fields caputure if the response was a mutal aid response or took place in the primary area of the agency.
SubCat	Subject Category	Subject Category: Use the list to best select the subject category. If the subject has a cognitive disorder (autism, Alzheimer's, dementia, despondent, mental illness, mental retardation) they should be classified based upon the disorder, regardless of activity. If they have no disorder and are under the age of 16 use child. If they have no disorder and are older than 16 then use the activity that best matches why they became lost or the subject of a SAR effort. If no category appears to fit, use other and provide a description in the subject subj-category field,
SubCatSub	Subject Sub-Category	Subject Sub Category: Provides additional information about lost subject. For subjects such as Dementia, Despondents, Autistic, Mental Retardation sub-category lists the activity or subdiagnosis. For Categories such as Workers or Gatherers it lists the actual type of work or item being Gathered. For Children it lists the activity (Playing, Runaway, Hiker are common choices)
SubAct	Subject Activity	Subject Activity:

Name	Brief Description	Description
		List the activity the subject was performing. In many cases this will be the same as the subject category. In cases of child it will be the actual activity. Playing and Runaway are also common children options. For Dementia most common activity is simply a walkaway but other activities are possible.
CntMtd	Contact Method	
IPPType	IPP Type	IPP Type: Indicate if the IPP is a PLS (Place Last Seen) or LKP (Last Known Point).
IPPClass	IPP Classification	IPP Type: Enter the physical feature that best represents the IPP, these may include Vehicle, home, instituition, road, trail, campsite, etc.
IPPLat	IPP Coord. (N/S)	
IPPLong	IPP Coord. (E/W)	IPP Coordinates: Coordinates may be either lat (N) long (W) or UTM. It may work the best if the form designer specifies only one acceptable format (DD, DM, UTM, or USNG) and does not offer a choice. Choices are offered on the master form, since different regions, states/provinces, or countries have preferred methods of specifying coordinates. Please provide coordinates in WGS83 datum
EcoDom	EcoRegion Domain	EcoRegion: List the EcoRegion domain as listed by Bailey. Choices are Polar, Dry, Temperate, and Tropical. This field will be completed by the database manager if not filled in by user. For many users only one Ecoregion domain is possible so including it on a form is not required.
EcoDiv	EcoRegion Division	EcoRegion Division: Enters the Bailey EcoRegion Division number including the M designator if a mountainous Divison from the list. If unknown, leave blank or look up on internet.

Name	Brief Description	Description
Pop	Population Density	Population density: Classify the area as urban, suburban, rural, wilderness, or water.
Ter	Terrain	Terrain: Classify as mountainous (terrain sharply increases more than 300 feet/100 meters), hilly (rolling hills throughout search area), flat, or water
Cover	Land Cover	
Owner	Land Owner	
Wx	Weather	Weather (Wx): Choose from the following options: Clear, Partly Cloudy, Cloudy, Overcast, Foggy, Drizzle, Showers, Rain, Hail, Sleet, Snow, Blizzard, or Smokey.
Tmax	Temperature - Maximum	Temperature - Maximum: Highest temperature that occurred during the search (including when the subject went missing) in degrees. If only one temperature was provided it was recorded in this field. Unit option will determine F or C.
Tmin	Temperature - Minimum	Temperature (Low): The lowest temperature that occurred during the search in degrees. Option will determine F or C.
Wind	Wind	Wind: Highest wind speed recorded during the search. Option will determine if in mph or km ph
Rain	Rain	Rain: Choose the term that best describes the rain conditions from the time the subject was last seen.
SnowGrd	Snow on Ground	Snow: Mark the checkbox if snow was on the ground during the search. Use the drop down box to indicate the amount of snow that fell during the search.
Snow	Snow	
Light	Light	

Name	Brief Description	Description
SubGrp	Group Outcome	
GrpTyp	Group Type	Group Type: List the type of group. If the entire group is lost or involved in a rescue list the entire group. If the party seperates from the group use only the subject of the search. Options include: M (single male), F (single female), MM (group of all males), FF (group of all females), MF (group of males and females), AC (Adult/Child - at least person 21 or over and at least one person 16 or less).
Age	Age	Age: In years. Use whole numbers unless toddler under two years old. Then use decimal. If multiple subject list the oldest and the youngest.
Sex	Sex	Sex: Enter M for male and F for female. Enter the sex for all involved in the incident. If a group and the lost person seperated from the group only list those who were lost.
Local	Local	Local: Is the subject local or has knowledge of the area? Choice is yes or no.
Wgt	Weight	Weight: Record subject's weight in Kilograms (Kg) or pounds depending upon selected units.
Hgt	Height	Height: Subjects height in centimeters (cm) or inches dependin upon selected units.
Bld	Build	Build: Choices include: Thin, Medium, Heavy, Overweight, and Obese.
Fit	Physical Fitness	Physical Fitness: Record as Excellent, Good, Fair, or Poor.
Exp	Experience	Experience:

Name	Brief Description	Description
		Choose from Excellent, Good, Fair, Poor.
Eq	Equipment	Equipment: Choose from Excellent, Good, Fair, Poor.
Cl	Clothing	Clothing: Options are: Excellent, Good, Fair, Poor. As viewed for the conditions the subject encountered.
Sur	Survival training	Survival Training: Choose from Excellent, Good, Fair, Poor (none).
Mnt	Mental Fitness	Mental Fitness: Record as Normal, Mild, Moderate, or Severe if a non-normal disorder exists.
TLS	Last Seen Date/Time	
TSN	SAR Notified Date/Time	
SF	Subject Located Date/Time	
Iclose	Incident Closed Date/Time	
TTL	Total hours	Total Hours: The total time from when the subject was last seen until they were found. This should be the sum of the notify hours and search hours. Time is elapsed hours and minutes formatted as [h]:mm
TST	Search hours	Search Hours: The elapsed time required to locate the subject or the duration of the search. The duration is typically calculated from the notification time till the subject is found. See notify hours for directions on time formats.
DesLat	Destination Coord. (N/S)	Destination Coordinate: If the subject has a known destination please provide the coordinate. Not all incidents will have a known destination. Use DD, DM, UTM, or USNG format. Please provide coordinate in WGS83 map datum.

Name	Brief Description	Description
DesLong	Destination Coord. (E/W)	
DOT	Initial Direction of Travel	Initial Direction of Travel: Give the initial direction of travel (if known) in degree true north.
DOThow	DOT How determined	iDOT determined: How was the direction of travel determined
RPLSLat	Revised LKP/PLS (N/S)	Revised LKP/PLS: On some incidents, investigations or a highly significant and correlated clue will result in a revised or updated PLS or LKP. If the incident did have a revised LKP or PLS please provide the coordinates. If the LKP/PLS was revised more than once, please detail in the comment section.
RPLSLong	Revised LKP/PLS (E/W)	
RevPLS	Revised How Determined	Reason to Update LKP/PLS: Please select the reason why the LKP/PLS was revised from the list.
RevDOT	Revised DOT	
DECLat	Decision Point Coord. (N/S)	
DECLong	Decision Point Coord. (E/W)	
DECTyp	Type of Decision Point	
Dec	Decision Point Factor	
Outcm	Incident Outcome	Search Outcome: Enter how the subject was found. Possible choices include; self recovered, Public (includes family and freinds), investigative (subject located by law enforcement checking hospitals, jails, sheltors, bastard searches, staged incidents, taking public/private transportation of any sort), suspension, or search effort. If investigative please complete the

Name	Brief Description	Description
		next column. If search effort please fill in subject found by resource column.
Scen	Scenario	Scenario: Used to describe what actually caused a missing person incident. Determined after the subject located. Options are: Avalanche, Criminal, Despondent, Drowning, Evading, Investigative, Lost, Medical, Overdue, Stranded, or Trauma. Choose only one.
Susp	Suspension Reasons	Suspended: Click the box if the search was suspended.
SubjNum	# Subjects	Number Lost: List the number of people involved in the incident. In the case of groups, if the lost person(s) separate from the group, only list the number of people lost.
Well	# Well	
Inj	# Injured	
DOA	# DOA	
Saves	# Saved	
Flat	Find Coord (N/S)	
Flong	Find Coord (E/W)	Find Coordinates: Coordinates may be either lat (N) long (W) or UTM.
DisIPP	Distance IPP	Distance from PLS: Distance to the tenth of a mile or kilometer, if possible. (ie 2.0, 0.7, 1.2). Leave blank if no data or data not applicable. Enter 0 if subject found less than 87 yards from IPP. Between 88-263 yards enter 0.1 miles. Enter 0 if subject found less than 50 meters from IPP.
BFnd	Find Bearing	Find Bearing: Bearing (ture north) from the IPP to the Find

Name	Brief Description	Description
Ffeat	Find Feature	Subject Found terrain: List the terrain feature that best describes where the subject was found.
Ffeat2	Found Secondary	Found Secondary: Since the terrain type list may not be specific enough, please indicate any secondary description that helps to describe the terrain the subject was located.
Det	Detectability	Detectability: Select the term that best describes how easy it was to spot (detect) the subject.
MobRes	Mobility & Responsiveness	Mobility & Responsiveness: Choose the term that best describes the subject's condition when they were located.
Strat	Lost Strategy	Lost Strategy: List the primary strategy used by the subject once they recognized they were lost. If multiple methods used, by describe in comments.
Mob	Mobility (hours)	# Hrs Subject Mobile: Report the number of hours the subject reported as being mobile. Number of hours should be measured from when the subject was last seen till the stopping moving altogather. If the subject slept during the night and then resumed movement upon awakening the sleep time would be included. The goal is to determine after how many hours do subjects do longer move. This will require finding the subject alive and in good enough condition to be aware of their efforts. An estimate should not be trusted from subjects with diminished cognitive functioning.
TrkOff	Track Offset	Track Offset: The track offset is the shortest (closest point of approach) between the subject's find location and the nearest linear features (road, trail, drainage, pipline cut, etc). The subject may or may not have used that linear feature as a travel aid. It is measured in yards or meters.

Name	Brief Description	Description
Elv, ElvFt	Elevation Change	Elevation Change: Record in feet or meters the change in the subject's elevation from the LKP to the find site. If the subject gained elevation (went uphill) check the up box. If the subject lost elevation (went downhill) check the down box. If the subject did not lose or gain elevation record as 0. If the number is unknown leave the field blank. If it is only known that the subject went downhill record as "Down", if they went uphill, record "Up" and if they stayed at the same elevation record as "0".
Status	Status	Subject Status: List the medical status of the subject when found. Choices included; Live and well (no medical aid required, subject able to walk-out on own), injured (if aviable list if major or minor injuries), or Dead on Arrival (DOA, deceased),
Mech1	Mechanism	Medical Mechanism: If the subject was located injuried or DOA, choose the mechanism or injury or illness.
Inj	Injury Type	Medical Damage: For injuries list the type of injury
Ill	Illness	Medical Disorder: List the type of illness or disorder
Tx	Treatment by	
Each Checkbox	Rescue/Evacuation Methods	Rescue Method: If multiple methods list each in the comment box.
SrchInj	Injured Searcher	
SrchInjDet	Injured Searcher Details	
Sig	Signalling	
	Resources Used	
FndRes	Find Resource	Subject found by resources:

Name	Brief Description	Description
		Please list the type of SAR resource that located the subject. Possible choices include; Air-Scent dog, Tracking/trailing dog, attraction, ATV, boat, Confinement, Diver, Fixed wing, Hasty search, Helicopter, Horseback, Motorcycle, Mountain Bike, Raft, Snowmobile, (man)tracking, Vehicle, Sonar, or list other method.
Tasks	# Tasks	
DogNum	# Dogs	
AirTsk	# Air Tasks	
AirNum	# Aircraft	
AirHrs	# Air Hours	Total Air Resource Hours: List the total hours air resources were used.
Evol	Emergent Volunters	
Peop	Total Personnel	Total Personnel: Record the total number of Personnel involved. This includes both volunteer and paid.
Manhrs	Total Man Hours	Total Manhours: List the total number of manhours expended on the incident.
VehNum	# Vehicles	
MilesDrv	Distance Traveled	
Cost	Total Cost	
Comment	Comments	Comments: Please provide a brief synopsis of the incident. Include additional details when pulldown fields are inadequate to fully describe what happened.
	Personality	Personality: Choose from the following options: Confident, Outgoing, Unsure, Withdrawn, or Suicidal.
	Investigative Find	Investigative Find:

Name	Brief Description	Description
		Please list the reason why the search is classified as an investigative find (should be selected as the subject find type). Possible reasons may include; took transportation away from LKP (plane, train, bus, taxi, automobile, ferry), picked up by friend, taken to jail, hospital, shelter, "bastard case", etc.
	Mission Close	Mission Suspended: List the reason why the mission either suspended or ended. Possible reasons include: Subject found, Authority decision, false report, family, hazards to searchers, lack of clues, survivability, weather, or other factors.
	Mission Cause	Mission Cause: From the list of choices choose the best reason that caused the mission.
	Medical	Medical: List the cause of death or the nature of medical/trauma problems.

2. Contacts

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