



**Tennessee  
Information Enforcement System (TIES)  
Vendor & Agency Messaging  
Resource Guide**

**Prepared by:**

**The Tennessee Bureau of Investigation**

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State agencies are allowed to connect and send/receive messages via web services in certain situations where approved and arranged by TBI. APPENDIX C: GLOSSARY & ACRONYMS ..... 30

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## **ACKNOWLEDGEMENTS**

This Resource Guide was prepared under the direction of the Tennessee Bureau of Investigation (TBI). All information within is presented as a guide for connecting to the TIES message switch and for sending and receiving messages. Contact TBI for guidelines, requirements, and procedures which must be followed by agencies and vendors in order to be authorized for connection and message transmission to TIES, NCIC, and other agencies who provide data services accessible by TIES. Simply fulfilling the technical requirements presented in this Resource Guide will NOT be enough to gain access to TIES.

## **CONDITIONS**

This document is to be used as a technical reference for those agencies and vendors who work with them that are implementing message transmission to TIES. This document will be updated from time to time to reflect connectivity improvements and changes in process and technology. Please feel free to report any suggestions for improvement to Brad.Truitt@tn.gov.

## **CONFIDENTIALITY**

The information in this document is confidential and should only be used within criminal justice agencies of the Tennessee Criminal Justice System and contracting vendors with those agencies.

## **CONTACTS**

For more information about the TIES Vendor & Agency Messaging Resource Guide, please contact:

Brad Truitt, Information Systems Director  
Tennessee Bureau of Investigation  
901 R.S. Gass Boulevard  
Nashville, TN 37216-2639  
(615) 744-4008  
brad.truitt@tn.gov

or

Katie Black  
Tennessee Bureau of Investigation  
901 R.S. Gass Boulevard  
Nashville, TN 37216-2639  
(615) 744-4072  
katie.black@tn.gov

or

Christy Moss  
Tennessee Bureau of Investigation  
901 R.S. Gass Boulevard  
Nashville, TN 37216-2639  
(615) 744-4214  
christy.moss@tn.gov

## TIES MESSAGING SUMMARY

### Purpose of TIES Messaging

The primary purpose of messaging via TIES is to provide law enforcement agencies with accurate, timely, and comprehensive criminal justice information from Tennessee state criminal justice systems, national criminal justice agencies such as the FBI via NCIC, and from other state criminal justice systems via Nlets, and to provide that information via TIES to other state and national agencies. The knowledge gained with accurate and timely criminal justice information correlates directly to public and law enforcement safety.

### TIES Message Switch – Eliminating Confusion

Please note that in many cases you will hear or read the term "message switch" or "TIES switch." These terms refer to the TIES message system applications and not to a specific network switch appliance. Although network switches perform an important role in the networking architecture of the TIES system, the "message switch" consists of a suite of applications that provide connectivity and messaging capabilities to other application programs and server systems across the state and around the nation.

### TIES Messaging Guidelines

TIES messages may be as simple as a text message sent to another agency indicating a Be On The Lookout (BOLO) for a suspect or as complicated as submission of Wanted Person, Sex Offender, Order of Protection, Missing Child/Person, or other records to the FBI NCIC system. TBI publishes a TIES Operating Manual which is the primary source for guidelines and requirements for TIES messaging and which also describes the majority of messages that may be sent or received with TIES. This Resource Guide will assume familiarity with the TIES Operating Manual and message formats and other manuals and resources available from TBI or referenced in the TIES Operating Manual.

### Message Examples

For introductory purposes, here are some samples of messages taken from the TIES Operating Manual. This Resource Guide will walk through the process of connecting and sending several of these example messages and receiving the responses. Then more complex messaging scenarios will be covered including sending and receiving images and "keep-alive" messages.

#### TN Operator License Number for Status

Message Key: DQ01

Purpose: To inquire on Tennessee driver license by operator license number (OLN)

Destination: OIR

Example: TENN.DQ01.TN0950001.TN.\*MYUSERIDNO.OLN/088776655

#### Administrative Message

Message Key: AM

Purpose: To send a criminal justice related point-to-point free-form message

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Destination: Another agency

Example: TENN.AM.TN0950001.TN0190101.\*MYUSERIDNO.TO: OFFICER JONES

FROM: OFFICER SMITH

REF: BE ON THE LOOKOUT (BOLO)

BE ON THE LOOKOUT FOR SUSPECT DRIVING RECKLESSLY ON HIGHWAY 109

AUTHORITY/WILSON CO SO.OPR/SMITH

### Enter Stolen Vehicle

Message Key: EV

Purpose: To send stolen vehicle record to the FBI NCIC system

Destination: NCIC

Example:

TENN.EV.TNTBI00Q6.\*MYUSERIDNO.ABC1234.TN.2012.PP.1F52G145323452342344.2012.F  
ORD.F15.HT.BLU.20120501.CASEST1123.....

Some notes about these simple examples:

- These are typical simple examples of messages sent TO the TIES message switch
- The actual data sent TO the TIES message switch looks drastically different, is binary in nature, and has specific header/trailer information that is not indicated in these examples
- The responses/information received back when these messages are sent also looks different and includes acknowledgment messages from TIES as well as potential response messages from the receiving agencies.

## Message Responses

Message responses can be of several types:

- Message Acknowledgments
- Query Responses
- Non-requested (unsolicited) messages

Once a connection is made to the TIES system, messages may be ready to be received at any point in time. Under the technical discussion regarding message transmission there is more detail about sending and receiving message data. In this section, a few examples of each type of message response are shown. Here are some responses based on the above examples.

### TN Operator License Number for Status

Example: TENN.DQ01.TN0950001.TN.\*MYUSERIDNO.OLN/088776655

Example Acknowledgment Received:

+ TN0950001 MYUSERIDNO 00002 00:54 2012/07/25

Example Acknowledgment Received with System Message included:

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+TN0950001 MYUSERIDNO 00001 10:47 2012/07/28  
TNDMV0000 DOWN - MESSAGE PLACED ON QUEUE

### Example Acknowledgment Received with failed validation information

-TN0950001 MYUSERIDNO 00007 14:32 2012/07/26  
FIELD <DST> TOO SMALL [2<9] 'TN'

### Example Response Received:

DR.TN0000000  
10:23 07/16/12 00060  
10:23 07/16/12 00115 TN0950001  
\*MYUSERIDNO  
TXT  
NAME: SMITH BARRY  
ADDRESS: 4413 HORACE TAYLOR RD  
NASHVILLE TN 37803 0  
DR LIC NO: 101963047 BIRTH DATE: 19660506 LIC CLASS: D\*\*\* ENDRSE: \*\*\*\*  
STICKER NO: PREVIOUS CLASS: \*\*\*\*  
ISSUE DATE: 20091102 EXPIRATION DATE: 20140918 ORGAN DONOR: NO  
EYES: BR HAIR: GR SEX: M RACE: W HEIGHT: 5FT 10IN WEIGHT: 165  
NON-CDL STATUS: VALID LICENSE  
NON-CDL ELIGIBILITY DATE: 0000000000 GUN PERMIT STATUS: NONE  
CDL STATUS: NONE  
CDL ELIGIBILITY DATE: 0000000000  
CURRENTLY REVOKED IN TN FOR DUI? NO DUI ON/AFTER 19970101: NO  
SOC: 000-00-0000 TOTAL NON-CDL RECS: 000 TOTAL CDL RECS: 000  
RESTRICTIONS: NONE

### Administrative Message

Example: TENN.AM.TN0950001.TN0190101.\*MYUSERIDNO.TO: OFFICER JONES  
FROM: OFFICER SMITH  
REF: BE ON THE LOOKOUT (BOLO)  
BE ON THE LOOKOUT FOR SUSPECT DRIVING RECKLESSLY ON HIGHWAY 109  
AUTHORITY/WILSON CO SO.OPR/SMITH

### Example Acknowledgment Received:

+ TN0950001 MYUSERIDNO 00002 00:54 2012/07/25

### Example Response Received by Receiving Agency:

AM.TN0950001  
14:22 07/28/12 00005  
14:22 07/28/12 00005 TN0190101  
\*MYUSERIDNO  
TXT  
TO: OFFICER JONES  
FROM: OFFICER SMITH

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REF: BE ON THE LOOKOUT (BOLO)  
BE ON THE LOOKOUT FOR SUSPECT DRIVING RECKLESSLY ON HIGHWAY 109  
AUTHORITY/WILSON CO SO.OPR/SMITH

### Enter Stolen Vehicle

Example:

TENN.EV.TNTBI00Q6.\*MYUSERIDNO.ABC1234.TN.2012.PP.BLU.2012.FORD.F15.HT.BLU.20  
120501.CASEST1123.....

### Example Acknowledgment Received:

+ TN0950001 MYUSERIDNO 00002 00:54 2012/07/25

### Example Response Received from NCIC:

EV.TNNCIC000  
14:36 07/28/12 00004  
14:36 07/28/12 00024 TN0950001  
\*SLOWREY  
TXT

TN0950001  
NIC/V990118083 VIN/1F52G145323452342344  
OCA/CASE12345

## Message Fields – Common Features

Message routing in TIES is determined by a combination of rules based upon message source, message type codes (message keys), and destination addresses. In general, messages input by agency network terminals have the following format:

Messages to Specific Destinations (Nlets destinations, other Tennessee destinations):

TENN.MKE.SOURCE.DEST.\*OPTCON.MESSAGE FIELDS

Administrative Messages (AM):

TENN.MKE.SOURCE.DEST.\*OPTCON.TXT  
TEXT OF MESSAGE

Messages to Known Destinations (NCIC, Department of Safety, Department of Revenue):

TENN.MKE.SOURCE.\*OPTCON.MESSAGE FIELDS

**TENN** is the literal letters TENN that identify that the message is from a Tennessee source station using Tennessee message formats. NOTE: The letters TENN and the period are typically "hidden"

from operators, since they typically know messages by the MKE code and the TENN is not of significance to their operation of the system.

**MKE** is the transaction message key (type) code.

**SOURCE** is the originating network terminal ORI. If SOURCE is not present in the input (i.e., MKE..DEST.\*OPTCON.), the TIES system will insert the primary ORI assigned to the connection line. See Appendix A: About the ORI for more information about Originating Agency Identifiers. Contact TBI to request ORIs for an agency.

**DEST** is any valid network destination codes. For certain MKEs (E.G., those messages directed to in-state databases, etc.), DEST is not required in the input (i.e., MKE.SOURCE.\*OPTCON.). There may be multiple valid destination codes with each input. If more than one is used in any input header, each will be separated by a comma delimiter. DEST codes may be a: 1) in-state ORI (alias name for station); 2) out-of-state ORI or state abbreviation (Up to 5 may be used, with each directed to NLETS); or 3) group code. For messages to be directed to NCIC, no DEST field or field delimiter is required, as all NCIC MKE's are unique. NLETS messages that are destined for Tennessee are routed to the appropriate in-state destination without being sent to NLETS.

**\*OPTCON** is the optional control field, the use of which has been standardized by NLETS. In all messages, the \*OPTCON field will remain intact (no system manipulation) and returned on any responses to the message. If it is present in an NCIC message, the data in the \*OPTCON field – if valid by NLETS standards – will be inserted in the NCIC header and returned in the optional control field area of the message response sent back to the agency.

**"TXT"** is an optional delimiting code FOR AM MESSAGES that separates the header information from the text of the message. When included, the TXT identifier is typically followed by a line feed or period, but if neither is included the "TXT" still recognized. Following are several variations of message format that are acceptable:

**Example 1:**

```
AM.TN0950001.TN.*MYUSERIDNO.TXTNOTICE OF ARREST -- OLN/088776655
```

**Example 2:**

```
AM.TN0950001.TN.*MYUSERIDNO.TXT.NOTICE OF ARREST -- OLN/088776655
```

**Example 3:**

```
AM.TN0950001.TN.*MYUSERIDNO.TXT  
NOTICE OF ARREST -- OLN/088776655
```

Note that Message Data is typically sent in all Uppercase

Note that in messages received from NCIC, the letter "O" is converted to the number "0" by NCIC before it is received by the TIES system, and those responses are sent on to the agency station as they are received from NCIC, so the station will receive those with the letter "O" represented as the number "0".

## Message Responses – Common Features

When a message response or Administrative Message is sent by TIES to a connected station, the initial information received by the station follows a consistent pattern:

```
MKE.SOURCE
```

HH:MM MM/DD/YY NNNNN

HH:MM MM/DD/YY NNNNN DEST

\*OPTCON

TXT

RESPONSE DATA

**MKE** is the response transaction message key (type) code.

**SOURCE** is the originating network terminal ORI.

**HH:MM MM/DD/YY (first line)** is the time and date the message was received by the TIES system from its origination point.

**NNNNN (first line)** is a message number assigned to the message received by the TIES system from its origination point

**HH:MM MM/DD/YY (second line)** is the time and date the message was sent by the TIES system to the destination line.

**NNNNN (second line)** is a message number assigned to the message sent by the TIES system to the destination line.

**DEST** is the network destination ORI or destination code for the message response.

\***OPTCON** is the optional control field, the use of which has been standardized by NLETS. This will match the optional control field sent in the original message sent by the agency, if applicable.

"**TXT**" is a delimiting code indicating that the actual response message data follows on the next line.

### Message Acknowledgments – Common Features

When a message is submitted to TIES, validations are performed on the message data to make sure it is a valid message key, that the ORI is valid for the connection line, that certain message fields exist and are in the correct data format, and that the message contains required and valid field data for the message key. The TIES system sends a response Acknowledgment message back to the agency, either indicating that the message is valid using a "+" response, or noting that the message was invalid using a "-" response along with descriptive information about the field that was invalid.

Examples of these responses were presented in the Message Responses section. Here is further explanation of some variations on these responses.

#### Positive System Responses

When a message is input successfully from any other network node, a notice of acceptance is immediately returned to the submitting agency line. The standard convention required to be used on the TIES system for such notice is:

+ MNEM OOOOOOOOOO NNNNN HH:MM YYYY/MM/DD

Where **MNEM** is the primary station mnemonic (ORI) assigned to the node, **OOOOOOOOOO** is the optional control field sent on the received message (padded on the right to fill 10 characters), **NNNNN** is the input sequence number assigned by the system, **HH:MM** is the system time and **YYYY/MM/DD** is the system date.

### Queued Message Responses

For messages input correctly from a network nodes requiring a response, the following message (or acceptable substitute) is provided when the destination is not available for message delivery:

MNEM DOWN – MESSAGE PLACED ON QUEUE

or, if multiple destinations are unavailable,

THE FOLLOWING STATIONS ARE DOWN – MESSAGE PLACED ON QUEUE

MNEM MNEM MNEM MNEM....

This is sent underneath and as part of the positive system response message and is not sent as an additional message.

### Negative System Responses

If a message is input incorrectly from a user/agency network node, the message will be discarded and a reject notice is immediately sent to the user with a clear explanation of the cause for rejection. This message clearly indicates in layman's terms the cause of the error including any field identifiers or other information to make the reason for the rejection message understandable to the operator. The rejection message format for such a notice is:

- MNEM OOOOOOOOOO NNNNN HH:MM YYYY/MM/DD

REJ EXP

Where the primary message line is similar to the positive acknowledgement and the REJ EXP is the explanation of the cause for rejection.

## Connecting and Sending Messages – First Steps

Connecting and sending messages to the TIES switch, and conversely receiving messages in return, is but a small part of the overall process of Agency participation in the TIES messaging system. TBI maintains strict control of agencies and vendors who desire to interface with the TIES switch system. IF YOU HAVE NOT CONTACTED TBI AT THIS TIME, YOU SHOULD DO SO NOW. TBI staff will guide you through the process of meeting the following requirements, which are not covered in this document:

- Establishing secure network connectivity to TBI and associated security documentation requirements
- Training and certification for TAC, Alternate TAC, and Dispatch/Operator staff to be authorized as TIES and NCIC operators
- Testing and approval of vendor software for TIES access

- Authorization, Audit, and Distribution/Assignment of ORI codes to agencies and workstations
- Vendor agreements and responsibilities
- Up-to-date documentation and standards for messaging to Tennessee agencies, NCIC, and other states via Nlets.
- Verification of source connection IP address (agency firewall, gateway, or specific device if NAT not used)
- Setup of agency terminals and ORIS in the TIES switch management system
- Authorization of messages allowed to be sent from the ORIs assigned to the agency

The rest of this document is focused on the technical requirements for connecting and exchanging messages with the TIES message switch.

### TIES Connectivity 101

Connecting to the TIES message switch is accomplished with a TCP/IP based socket connection. The socket should remain open for the possibility of receiving un-requested (unsolicited) messages from the TIES switch or other agencies. Examples of these unsolicited messages might be Weather alerts or forecasts, Administrative Messages (AM) with law enforcement alerts such as Amber Alerts or BOLO messages, Hit request messages for arrests or contact with wanted/fugitive individuals, and so on. It is recommended that Asynchronous communications technology be utilized so that unsolicited messages and message responses may be received and provided to agency staff quickly and accurately, but the TIES messaging system does not mandate asynchronous communication.

Connections to the TIES switch are made to the following IP address:

**170.143.231.212**

Unless other arrangements are made with TBI Networking and TIES Switch support staff, the connection should be opened to the following port:

**4004**

TIES maintains a TEST system which should be used initially for connecting and testing connections from a new agency. Connections to the TIES test switch are made to the following IP address:

**170.143.231.218**

Unless other arrangements are made with TBI Networking and TIES Switch support staff, the connection to the TEST TIES message switch should be opened to the following port:

**4004**

An important note for connecting to the TIES message system is that a static IP address must be provided as the source IP for connections coming to the TIES system. This IP address may be the VPN address for the agency VPN device, or it may be a workstation IP address for a connecting workstation, depending on the network configuration used at the agency and the vendor software. In some cases, the IP address belongs to a vendor host server located at TBI. TBI network support staff may be involved to assist in determining the IP address being used at an agency, but typically agency IT staff or state OIR staff will have this information. Once this IP address is obtained and submitted to TBI, the connection record for the agency may be entered and connectivity may be established. If this information is not entered correctly, the TIES switch will log failed attempts to connect and will reject connections (accept then close them) from unknown sources.

When a connection is opened from an authorized source, the TIES switch will note the connection as Open and Online in the TIES administration console and this may be confirmed by TIES operations personnel.

When a connection needs to be closed, the agency/vendor application should simply close the socket and the switch will note the connection as Offline in the TIES administration console. This may be confirmed by TIES operations personnel.

### **Special Note – Network Disconnects and Reconnects**

At times there may be disconnects in the TCP/IP socket resulting from network line issues, system outages, network appliance outages, or other circumstances. The TIES system handles reconnects on Online connections in this manner. If a connect attempt is made from a line/IP that is showing as Online in the TIES system, the system closes the current online socket and marks the line as Offline. The connect attempt is NOT accepted. It is up to the connecting agency/vendor application to attempt to connect again to establish an Online connection with the TIES switch. There is an advanced keep-alive mechanism at the application layer that will be explained in detail in the Advanced Topics section, but using the keep-alive option does not change the way TIES handles re-connect attempts.

### **Special Note – Disabled Lines**

TIES Operations personnel have the capability to mark a line as "Disabled" which will cause the TIES system to refuse connection attempts from the IP associated with the line.

## **TIES Application Layer Protocol**

We have discussed the basics of message formats and connectivity, and at this point it is time to present the technical details surrounding message transmission to and from the TIES system. This section assumes that you have successfully connected to the TIES system. At this point your line will begin receiving messages directed toward any ORI stations assigned to the line. You may also send messages that are authorized for each ORI. Note that some messages are included in "Query Only" authorization, others are included in "Mobile Data Terminal (MDT)" authorization, others are in "Full Access" authorization, and others may be included for users with advanced NICS or III access. Messages are identified by the message key (such as QW, EV, AM, and so on).

No matter what message is being sent or received, all messages use the same specification of the "envelope," "wrapper," "header/footer," or however you wish to name the application protocol definition of exchanging information with the TIES system.

Before diving into the details of the protocol, here are some important notes:

- Message information should be sent in a contiguous series of binary data. This means that once your application begins sending a message that it should not start sending another

message on the line before the initial message data has been sent. The greatest potential for a problem is in a multi-threaded environment where more than one thread has the potential to send a message on the line. In this environment you must block around send functions so that one thread at a time has the opportunity to send messages down the line. Note that once you send a message there is no requirement to wait for anything from the TIES system before you send another message.

- Message data does not follow the boundaries between TCP/IP blocks. This means that as you receive a block of data you may encounter the end of one message and the start of another within the same TCP/IP block.
- Just as there is no requirement for you to wait for a specific acknowledgment from TIES before you send another message, TIES is not obligated to respond in a certain way or in a certain order after you send a message. This means that you may send a query, receive the response message from the query, and then receive the acknowledgement from the query. Although the TIES system makes an effort to establish a "queue" where messages in the queue are delivered in order, there is also a prioritization mechanism where some higher priority responses may be delivered before other messages if they are ready. The idea is that query results are more important than system acknowledgments. In future versions of TIES the acknowledgments may be completed ignored and not sent if query responses are ready to return to the station before the acknowledgment has been delivered.

### How to Start a Message – and Finish

Every message that is sent to the TIES system starts with a specific sequence of bytes called STAP. This is a term coined by NCIC and utilized in various messaging systems in the law enforcement community. The STAP bytes are (in hexadecimal notation):

**FF 00 AA 55**

Or in Decimal:

**255 0 170 85**

These four consecutive bytes signify the beginning of a message. If these four bytes are encountered at any point during data received, it should alert that a new message follows. These bytes are followed by a 20 byte structure that provides more information about the message:

**Message Length** (4 bytes, binary, in network byte order) – the easiest way to accommodate the ordering of this positive integer value is to use the functions *htonl* and *ntohl* or their counterpart in whatever language you are using. But to be specific, the ordering of bytes is "big-endian" meaning that the bytes are ordered left to right in the data stream from greatest significance to least. So for instance, a length value of 200 would have these bytes (in hexadecimal notation):

00 00 00 C8

Or in decimal

0 0 0 200

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For a length of 1203 the bytes would be (in hexadecimal notation):

00 00 04 B3

Or in decimal

0 0 4 179

NOTE that the decimal notation is not "readable" text – these are still binary byte-based representations of integer numbers, not "text-based" representations. So each byte has 0-255 values at that place value for the actual integer number.

One more note about message length – the integer message length value includes the 8 bytes of the start and stop data (see below) and the 20 byte information structure. So the message length value is computed as "length of message data" + 28.

**Header Length** (2 bytes, binary, in network byte order) – in the TIES system, this should always be the hexadecimal bytes representing the 16 bytes of the message structure after the Message Length:

00 10

Or in Decimal

00 16

**Function Code** (2 bytes, binary, in network byte order) – the TIES system recognizes 4 primary types of messages representing data sent, data received, line status request, and line status acknowledged. The data sent function indicates that message data is included that is being sent to the recipient. In return after receiving this data, the recipient sends back a data received message. In the Advanced Topics section of this document we talk about Keep Alives messages, which make use of line status request and line status acknowledged functions.

At this point, for sending data, use function code 1 to send data and not request an acknowledgement message in return, or 2 to send data and request an acknowledgement message. In hexadecimal:

00 01 : sending message data, no acknowledgement requested

00 02 : sending message data, please respond with acknowledgement

NOTE – if you send function code 2, you should expect to receive back a positive or negative acknowledgement message. This message has the form of a normal message with 0 data length and special status code. This message should NOT be confused with acknowledgment messages sent by the TIES system in response to message key information being valid or invalid. This is strictly an application protocol layer acknowledgement. Acknowledgement messages will be described briefly after this section.

**Validation Field** (4 bytes, binary, in network byte order) – This is only used when requesting acknowledgement messages, otherwise it should be filled with zeros. Whatever is sent in this field is returned intact in the same position on the acknowledgement message.

Typically Hexadecimal

00 00 00 00

**Data Length** (4 bytes, binary, in network byte order) – the easiest way to accommodate the ordering of this positive integer value is to use the functions *htonl* and *ntohl* or their counterpart in whatever language you are using. But to be specific, the ordering of bytes is "big-endian" meaning that the bytes are ordered left to right in the data stream. So for instance, a length value of 200 would have these bytes (in hexadecimal notation):

00 00 00 C8

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Or in decimal

0 0 0 200

For a length of 1203 the bytes would be (in hexadecimal notation):

00 00 04 B3

Or in decimal

0 0 4 179

This the length of the message information starting with the TENN.MKE and ending with the last byte of message data. This should agree with the number Message Length – 28.

**Status Code** (2 bytes, binary, in network byte order) – used in acknowledgement and line status request responses.

Hexadecimal

00 00

**Destination Code** (2 bytes, binary, in network byte order) – send "1" for TIES

Hexadecimal

00 01

In summary, a message that is being sent to TIES starts like this:

<b>STAP</b>	FF 00 AA 55
<b>Message Length</b>	00 00 00 00 (entire message length = data length + 28)
<b>Header Length</b>	00 10
<b>Function Code</b>	00 01 OR 00 02
<b>Validation Field</b>	00 00 00 00
<b>Data Length</b>	00 00 00 00 (message data length)
<b>Status Code</b>	00 00
<b>Destination Code</b>	00 01

**Message Data** (1 to N bytes, binary) – It might be tempting to assume that message data is all text strings, but in the Advanced Topics section we will detail how to include binary image information in the message data section. Therefore, all message data manipulation functions must account for the possibility that binary 0's are included in the message data.

**STOP bytes** (4 bytes, binary) – every message ends with the same four bytes, which are the STAP bytes in reverse:

Hexadecimal

**55 00 AA FF**

If the message does NOT end in these four bytes, it is considered invalid and is rejected.

Here is a sample message based on an application which does NOT request an acknowledgement:

<b>STAP</b>	FF 00 AA 55
<b>Message Length</b>	00 00 00 4C
<b>Header Length</b>	00 10
<b>Function Code</b>	00 01
<b>Validation Field</b>	00 00 00 00
<b>Data Length</b>	00 00 00 30
<b>Status Code</b>	00 00
<b>Destination Code</b>	00 01
<b>Message Data (48 bytes)</b>	TENN.DQ01.TN0950001.TN.*MYUSERIDNO.OLN/088776655
<b>STOP</b>	55 AA 00 FF

And in hex notation only:

```
FF00AA550000004C0010000100000000000000300000000154454e4e2e445130312e544e30393530
3030312e544e2e2a4d595553455249444e4f2e4f4c4e2f30383837373636353555AA00FF
```

## How to Receive a Message

Every message that is sent by TIES to a station has the same format as messages sent to TIES as described in the above section. The only difference comes in the case of acknowledgment messages which are returned by the switch when a message is sent with the function code 02. Normal messages sent by the TIES system are fairly standard as shown below:

<b>STAP</b>	FF 00 AA 55
<b>Message Length</b>	00 00 00 00 (entire message length = data length + 28)
<b>Header Length</b>	00 10
<b>Function Code</b>	00 01
<b>Validation Field</b>	00 00 00 00
<b>Data Length</b>	00 00 00 00 (message data length)
<b>Status Code</b>	00 00
<b>Destination Code</b>	00 01
<b>Message Data (1 – N bytes)</b>	(message response data here)
<b>STOP</b>	55 AA 00 FF

The TIES system typically will not send a message with function code 2 (request acknowledgement). Again, it is recommended that Asynchronous communications processing be used to receive messages from TIES.

## **Application Protocol Acknowledgement Messages**

When an agency application sends a message with function code 2, the TIES system will respond with an acknowledgement message. The acknowledgment message takes the same form as a normal message as shown below, but with the inclusion of status code information indicating success or error in receiving the message:

Positive acknowledgment

<b>STAP</b>	FF 00 AA 55
<b>Message Length</b>	00 00 00 1C
<b>Header Length</b>	00 10
<b>Function Code</b>	00 11
<b>Validation Field</b>	00 00 00 00
<b>Data Length</b>	00 00 00 00
<b>Status Code</b>	00 01
<b>Destination Code</b>	00 01
<b>STOP</b>	55 AA 00 FF

Negative acknowledgement

<b>STAP</b>	FF 00 AA 55
<b>Message Length</b>	00 00 00 1C
<b>Header Length</b>	00 10
<b>Function Code</b>	00 12
<b>Validation Field</b>	00 00 00 00
<b>Data Length</b>	00 00 00 00
<b>Status Code</b>	00 00 (one of the values listed below)
<b>Destination Code</b>	00 01
<b>STOP</b>	55 AA 00 FF

Status codes for Negative Acknowledgement (hexadecimal values):

00 11 - permanent (i.e., non recoverable) error occurred (e.g., disk failure)

- 00 12 - temporary (i.e., recoverable) error occurred (e.g., printer out of paper)
- 00 13 - logical error occurred (e.g., too many messages received too quickly, and thus a queue containing acknowledgments filled up)
- 00 21 - queried destination is available and ready
- 00 22 - queried destination is available, but not ready (e.g., printer has buffer space, but is out of paper)
- 00 23 - queried destination is not available and not ready
- 00 31 - Invalid function code received
- 00 32 - Invalid (or non-existent) destination received
- 00 33 - Invalid Extended Message Header format (or length) received
- 00 34 - Function not supported
- 00 41 - Attempt to start encryption with no key definition
- 00 42 - Invalid encryption header format (or length) received
- 00 43 - Encryption not supported.

## Application Protocol Summary

The TIES application protocol defines a binary message format that provides for reliable delivery of message data. For more information about image transmission, see the Advanced Topics section which follows.

## ADVANCED TOPICS

### Transmitting Images

Images are transmitted to and from the TIES system for a few select circumstances. At this time, images may be sent from an agency to the TIES system for submission to NCIC, or for transmission to another agency using the in-state AMI message (Administrative Message with Image).

Images may be received by the TIES connected agency as a result of an NCIC query, Drivers License query, Criminal History query with mugshot, and Administrative Message with Image.

### Images in Messages

A message received from TIES may contain images anywhere in the body of the text of a message. For instance, a message may have

TEXT

<image>

TEXT

<Image>

And so on. Where possible, the original ordering of text and image data should be maintained and presented to the user in that order. This is made possible by the mechanism used to store images in the message data.

Images are included in the message data of a message, whether the message is being sent or received. The message information data which specifies message length and data length include the length of any images contained in the message data, but do not give hints about whether image data is or is not included.

### Finding or Placing Images in Message Data

Image data is surrounded by an image structure that makes it simple to add or find images in the message data. The structure is defined as follows:

Image/Object Structure (hexadecimal notation)

<b>Start of Image Object</b>	10 64 62 6F
<b>Image/Object Length</b>	00 00 00 00
<b>Object Type</b>	"JPG " for images received from TIES "IMG " for images sent to NCIC "JPG " for images sent via Administrative Message with Image (AMI) "IMR" for images received from NCIC This is four bytes – include the trailing blank JPG = 4A 50 47 20 IMG = 49 4D 47 20 IMR = 49 4D 52 20
<b>Data Length</b>	00 00 00 00
<b>Data (1-N bytes)</b>	(binary image data here>
<b>Text Length</b>	00 00 00 00
<b>Text (1-N bytes)</b>	Variable length text data that is text associated with the object
<b>End of Image Object</b>	6F 62 64 10

**Image/Object Length** (4 bytes, binary, in network byte order) – the easiest way to accommodate the ordering of this positive integer value is to use the functions *htonl* and *ntohl* or their counterpart in whatever language you are using. But to be specific, the ordering of bytes is "big-endian" meaning that the bytes are ordered left to right in the data stream from greatest significance to least. So for instance, a length value of 200 would have these bytes (in hexadecimal notation):

00 00 00 C8

For a length of 1203 the bytes would be (in hexadecimal notation):

00 00 04 B3

One more note about image/object length – the integer message length value includes the 8 bytes of the start and stop data and the 16 byte information structure, plus the length of image data and text data. So the image/object length value is computed as "length of image data" + "length of text data" + 24.

### **Object Type** (4 bytes, text)

This document assumes that images are sent in JPG format, which is an NCIC standard. There are strict guidelines for NCIC image submission that should be adhered to. For TIES the purpose of interoperability with all software, image sizes should be kept very small (< 24K) if possible. Although it may be possible to send larger image files via TIES, some interfaces may not support sending and receiving larger image files. The sending of other types of data (documents, uncompressed image formats, audio, video) is discouraged at this time.

**Data Length** (4 bytes, binary, in network byte order) – length of the image data which follows. Same byte ordering as image length, big-endian from greatest significance to least left to right.

### **Data (1-N bytes)**

This is the complete image/object data in binary format, just as it would be saved in a file on a local system and viewed with imaging software.

**Text Length** (4 bytes, binary, in network byte order) – length of the text data which follows. Same byte ordering as image length, big-endian from greatest significance to least left to right.

### **Text (1-N bytes)**

This is the complete text data associated with the image.

## **Specific Cases – Receiving Image Data**

### **Driver License Response**

The most basic example of receiving image data is the driver license inquiry response. If you send a DQ01 message you will receive a driver license record along with the photo of the person on record.

The driver license record text part of the message looks like this:

DR.TN0000000

15:16 08/08/12 00010

15:16 08/08/12 00094 TN0950001

\*MYOPTCON

TXT

NAME: JONES            HARLEY            G

ADDRESS: TEST RD.

TESTING CITY    TN 111110000

DR LIC NO: 089070180 BIRTH DATE: 19811210    LIC CLASS: DM\*\*    ENDRSE: \*\*\*\*

STICKER NO: 6002565            PREVIOUS CLASS: D\*\*\*

ISSUE DATE: 20111130    EXPIRATION DATE: 20161210    ORGAN DONOR: YES

EYES: BR    HAIR: BL    SEX: M    RACE: W    HEIGHT: 6FT 01IN    WEIGHT: 190

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NON-CDL STATUS: VALID LICENSE

NON-CDL ELIGIBILITY DATE: 00000000

GUN PERMIT STATUS: EXPIRED

CDL STATUS: NONE

CDL ELIGIBILITY DATE: 00000000

CURRENTLY REVOKED IN TN FOR DUI? NO    DUI ON/AFTER 19970101: NO

SOC: 000-00-0000    TOTAL NON-CDL RECS: 000    TOTAL CDL RECS: 000

RESTRICTIONS: NONE

This is NOT the end of the message data though. At the end of the message text data is the image structure starting with 10 64 62 6F. This is where the image object is contained in the message. This is a simple example because after the image/object data the text length is 00 00 00 00 and then the end of the object structure 6f 62 64 10. Finally, a line feed and the STOP sequence indicating the end of the message has been reached.

Test system – DL # with image:

TENN.DQ01.TN0950001.TN.\*MYOPTCON .OLN/089070180

TENN.DQ01.TN0950001.TN.\*MYOPTCON .OLN/074653278

For a more visual look, see Appendix D – Traces of Image Records

### Criminal History Response

Encoding of images in Criminal History responses with mugshots are similar to the Driver License response. Criminal History responses are obtained with the FQ message key and added Image Indicator flag .IMQ/Y added to the FQ message.

### NCIC Response

NCIC Responses with images will have additional information in the image structure that corresponds to NCIC specifications. Here is an example from the NCIC specification of the text that may be included in an NCIC response:

Vehicle Image-Field Definition:

Field Name	Description	Length (bytes)	Content
IMT	Image Type	1 - 1 A	I
UTT	Upper Top Text	47 - 47 ANS	VIN:<VIN> LIC:<LIC> LIS:<LIS>
UBT	Upper Bottom Text	47 - 47 ANS	VYR:<VYR> VMA:<VMA>
LTT	Lower Top Text	47 - 47 ANS	NIC:<NIC> IMN:<IMN>
LBT	Lower Bottom Text	244-244 ANS	MIS:<MIS>
IMAGE-SIZE	Image Size in bytes	5 - 5 N	Image size in bytes, right justified, left filled with zeros

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IMAGE-DATA	Binary Image (Identifying Image)	Variable	Identifying Image Binary Image
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3. The <Image-Vehicle-Field> field conforms to the following:
  - a. All text SHALL be left justified.
  - b. Blank spaces SHALL be added as needed to fill each field.
  - c. A period SHALL follow the image data.
  - d. The image SHALL be displayed at the workstation in the following format: (All text is left justified.)

```

<UTT>
<UBT>
<Image-Data>
<LTT>
<LBT>

```

The IMR MFC is generated by the system to indicate to the workstation or any interface agency receiving the message that an image is included in a response.

The NCIC System image format follows this pattern:

```
<IMT><UTT><UBT><LTT><LBT><IMAGE-SIZE><IMAGE DATA>
```

1. IMT (Image Type Field) is one alphabetic character.
2. UTT (Upper Top Text) is 47 alphabetic, numeric and special characters and contains NAM and DOB; SER; BHN and REG; BTY and BLE; VIN, LIC and LIS; VMO and VST; or GNG.
3. UBT (Upper Bottom Text) is 47 alphabetic, numeric and special characters and contains RAC, HGT, WGT and DOI; TYP and OAN; BYR and BMA; VYR and VMA; CAT; or SGP.
4. LTT (Lower Top Text) is 47 alphabetic, numeric and special characters and contains NIC and IMN; IMN and text GENERIC BOAT; or IMN and text GENERIC VEHICLE.
5. LBT (Lower Bottom Text) is 244 alphabetic, numeric and special characters and contains Image MIS Field.
6. Image size is 5 numeric characters right justified, and left filled with zeros, and identifies the image size in bytes.
7. Image Data is the actual binary image of variable size.

When an image is returned from NCIC, it is returned as an IMR image/object type with more than image data in the image/object area. In this case the text length in the image/object structure is still 00 00 00 00,

The IMR data is included in the image/object data area in the NCIC Structure format as listed above. For example:

```

MNAM: PERSON, IMA WANTED          DOB: 19600101RAC: W HGT: 600      WGT: 200
DOI: 20010130      NIC: W092015506 IMN: I004000739      MIS:

```

08192

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This corresponds with the image field structure for person information in the NCIC manual:

Field Name	Description	Length (bytes)	Content
IMT	Image Type	1 - 1 A	<b>M</b>
UTT	Upper Top Text	47 - 47 ANS	<b>NAM PERSON, IMA WANTED DOB: 19600101</b>
UBT	Upper Bottom Text	47 - 47 ANS	<b>RAC: W HGT: 600 WGT: 200 DOI: 20010130</b>
LTT	Lower Top Text	47 - 47 ANS	<b>NIC: W092015506 IMN: I004000739</b>
LBT	Lower Bottom Text	244 – 244 ANS	<b>MIS: (white space here)</b>
IMAGE-SIZE	Image Size in bytes	5 - 5 N	<b>08192</b>
IMAGE-DATA	Binary Image (Identifying Image)	Variable	(not shown)

Note that unlike the message structure length fields, which are network binary representations of integer numbers, the IMAGE-SIZE in an NCIC message is a text representation of a number. The number 08192 in the above example actually represents the number 8192 in decimal.

This IMAGE-SIZE number plus the length of the NCIC structure, 391 bytes, should be the value in the Data Length value of the Image/Object structure.

Finally, in front of the NCIC image returned (in the text of the message data) is the field code "IMR/" which is immediately followed by the image/object structure.

Putting it all together you have:

<b>STAP</b>	FF 00 AA 55
<b>Message Length</b>	00 00 22 33
<b>Header Length</b>	00 10
<b>Function Code</b>	00 01
<b>Validation Field</b>	01 4F 2C 99 (example with information in the validation field)
<b>Data Length</b>	00 00 22 17 (Message Length – 28 decimal)
<b>Status Code</b>	02 08
<b>Destination Code</b>	00 01
<b>Message Data (48 bytes)</b>	QII.TNNCIC000 14:22 08/08/12 00020 14:22 08/08/12 00047 TN0950001 *MYOPTCON TXT

	TN0950001  MKE/IMAGE IMR/
--	------------------------------------

<b>Start of Image Object</b>	10 64 62 6F
<b>Image/Object Length</b>	00 00 21 9F
<b>Object Type</b>	IMR = 49 4D 52 20
<b>Data Length</b>	00 00 21 87 (image/object length – 24)
<b>Data (1-N bytes)</b>	MNAM:PERSON, IMA WANTED DOB:19600101RAC:W HGT:600 WGT:200 DOI:20010130 NIC:W092015506IMN:I004000739 MIS: 08192(JPG BINARY IMAGE DATA HERE)
<b>Text Length</b>	00 00 00 00
<b>Text (1-N bytes)</b>	(none)
<b>End of Image Object</b>	6F 62 64 10

In this case, the image object is followed by a trailing "." separator and line feed:

<b>STOP</b>	55 AA 00 FF
-------------	-------------

Note a few items here—the TIES system has inserted a validation code value in the message structure, as well as a status code value, which may be ignored.

For a more visual look, see Appendix D – Traces of Image Records

### Query Wanted Response with Image

The Query Wanted (QWA) message with image indicator set may return images associated with wanted records. These images will be returned in-line with the message data and have the same basic format as the QII images. The field tag IMR/ is included in the middle of the text of the message, followed by the image/object structure and image/object data. After the end of the image object is a trailing "." and line feed and then more text. For a visual example see Appendix D – Traces of Image Records.

### Administrative Message with Image (AMI)

The AMI message when received is similar to Driver License and Criminal History responses, but have the addition of .IMG/ prior to the image/object structure. The JPG image data begins immediately in the image data area, and after the image/object structure there is typically no more data before the STOP bytes of the message structure.

### Specific Case – Sending to NCIC

Sending images to NCIC, specifically using an EIM (Enter Identifying Image) message, is again a fairly straightforward process at this point, with one peculiar item. The NCIC Image Type (I or M generally) is inserted immediately after the IMG/ field:

IMG/I

Or

IMG/M

This is followed by the image/object structure. The object type is IMG. Within the image data area of the image/object structure is the NCIC image submission information followed by the binary image data. The NCIC image submission information begins again with the image type indicator and then 5 byte length of the image in plain text:

I07869

Or

M07869

The image data structure ends with 00 text data length and the image object structure stop bytes, followed by the message structure stop bytes.

### Specific Case – Sending AMI

Sending images in an AMI is also straightforward, with the AMI message text first and the .IMG/ field at the end followed by the image/object structure. The object type should be JPG. The data area of the image object structure contains only the JPG binary data. The image data structure ends with 00 text data length and the image object structure stop bytes, followed by the message structure stop bytes.

### Keep Alive Messages

In certain situations, it may be necessary for a system to maintain network line activity in order to keep a socket status open. Typically a station may keep an open line without the use of keep-alive messages, but in the event that there connection issues such as frequent dropped connections the keep alive message option may be useful.

When a station sends a line status request message to the TIES switch, the TIES system will respond with a line request acknowledgement. The timing of this response may vary depending on system load, number of messages being sent to and from the line, and network conditions. Typically the response will be sent in sub-second time. It is recommended that if a response is not received within a reasonable period of time (no more than 2 minutes) that the station/agency attempt to close and reconnect to the TIES switch. Please note the system reconnect process and realize that if the switch

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still maintains an Online status for the line that it will require 2 reconnect attempts to re-establish the connection after a network socket loss.

The initial request from the station will look like this:

"Keep Alive" Line Status Request

<b>STAP</b>	FF 00 AA 55
<b>Message Length</b>	00 00 00 1C
<b>Header Length</b>	00 10
<b>Function Code</b>	00 21
<b>Validation Field</b>	00 00 00 00
<b>Data Length</b>	00 00 00 00
<b>Status Code</b>	00 00
<b>Destination Code</b>	00 01
<b>STOP</b>	55 AA 00 FF

The response from the switch will look like this:

"Keep Alive" Line Status Response

<b>STAP</b>	FF 00 AA 55
<b>Message Length</b>	00 00 00 1C
<b>Header Length</b>	00 10
<b>Function Code</b>	00 22
<b>Validation Field</b>	00 00 00 00
<b>Data Length</b>	00 00 00 00
<b>Status Code</b>	00 01
<b>Destination Code</b>	00 01
<b>STOP</b>	55 AA 00 FF

Keep alive messages are unnecessary during times of network traffic, meaning that a keep alive, when chosen as a network option, should only be sent after the line has been inactive for a period of time (recommended less than 2 minutes). As long as traffic is being sent and received on the line, keep alive messages are unnecessary. So an application that includes logic for keep alive messages should also track "last time of activity" on the line and should wait a designated time of inactivity before attempting a keep-alive send.

## APPENDIX A: ABOUT THE ORI

**NOTE: THIS APPENDIX IS AN EXCERPT FROM THE FBI'S NCIC 2000 MANUAL**

### 1.5 ORI STRUCTURE AND USE

The Originating Agency Identifier (ORI) is a nine-character identifier assigned by FBI CJIS personnel to an Agency which has met the established qualifying criteria for ORI assignment to identify the Agency in transactions on the NCIC 2000 System. The structure of law enforcement ORIs (those ORIs ending with a zero) and other criminal justice ORIs (those ORIs ending with an alphabetic character) are as follows:

#### 1. POSITIONS 1 THROUGH 5

Positions 1 and 2 are the alphabetic characters representing the state or country in which the Agency is located.

**Example:** PA0040100

Positions 3, 4, and 5 are numeric characters indicating the county in which the Agency is located.

**Example:** PAOO40100

Exceptions to this are some state-level and federal agencies, which have the acronym for that Agency, or alphabetic variations thereof, in positions 3, 4, and 5, i.e., DCATF0000 and TXDPD0000 for the Bureau of Alcohol, Tobacco and Firearms and the Dallas, Texas, Police Department, respectively.

#### 2. POSITIONS 6 THROUGH 9 OF LAW ENFORCEMENT ORIs

The criterion FBI CJIS personnel uses for assigning a law enforcement ORI (one ending with a zero) is that the Agency is a governmental Agency or subunit thereof having statutory power of arrest and whose primary function is that of apprehension and detection.

Positions 6 and 7 in a law enforcement ORI are used to distinguish one Agency from another within the same county.

**Example:** PA0040100

Positions 8 and 9 of a law enforcement ORI are always double zero. NCIC 2000 users, particularly large city/urban police departments, may vary the last two positions (8 and 9) to identify internal divisions, units, substations, or multiple terminals for the same Agency within the same city. Any variation of the last two positions is acceptable with the exception that an alphabetic character cannot be used in position 9. NCIC 2000 does not assign these variations. The variations will not translate when a ZO inquiry is made.

**Example:** PA0040100

### **3. POSITIONS 6 THROUGH 9 OF CRIMINAL JUSTICE ORIs**

FBI CJIS personnel determine the numeric and alphabetic characters assigned to positions 6 through 9 for criminal justice ORIs as follows:

Positions 6 and 7 are numeric characters uniquely distinguishing one Agency from other agencies of the same type and level within the same county .They do not indicate location (e.g., city) of the Agency.

**Example:** PA004023C

Position 8 is a unique numeric character indicating the government level of the Agency:

1 -Local, Municipal, City

3 -County

5 -State

7 -Federal

9 -Nongovernmental

**Example:** PA004023C

Position 9 is an alphabetic character representing the type of Agency:

A -- Prosecuting Attorney's Offices (includes District Attorney's Offices, Attorney General's Offices, etc.).

B -- Pretrial service agencies and pretrial release agencies.

C -- Correctional Institutions (includes jails, prisons, detention centers, etc.).

D -- Civil Courts for use in domestic violence and stalking cases.

E -- Nongovernmental railroad or campus police departments qualifying for access to III. (This section provides criteria for assignment of a limited access ORI.)

G -- Probation and Parole Offices.

H -- Department of State National Visa Center.

I -- INTERPOL.

J -- Courts and Magistrates Offices.

K -- Medical examiners and coroners offices for access to Missing Person and Unidentified Person Files.

M -- Custodial facilities in medical or psychiatric institutions and some medical examiners' offices which are criminal justice in function.

N -- Regional dispatch centers which are criminal justice agencies or under the management control of criminal justice agencies.

O -- National Insurance Crime Bureau.

P -- Nongovernmental agencies that qualify for access to some NCIC 2000 files other than III. Also, 911 centers that do not have a management agreement.

Q -- Department of Housing and Urban Development approved Public Housing Agencies.

R -- Agencies authorized by Public Law 99 -- 169 for national security purposes.

U -- Federal and state governmental child support enforcement agencies.

V -- Department of Motor Vehicles.

W -- National Center for Missing and Exploited Children (NCMEC).

Y -- Local, county, state, or federal agencies that are classified as criminal justice agencies by statute but do not fall into one of the aforementioned categories, e.g., Arkansas Crime Information Center.

**Example:** PA004023C

### 1.6 Z ORIs

The FBI CJIS personnel temporarily assigns Z Agency identifier numbers to criminal justice agencies to facilitate fingerprint card orders until an NCIC 2000 ORI can be assigned. The Z numbers are also assigned to agencies which do not meet the criteria for an NCIC 2000 ORI assignment but are authorized by statute to submit fingerprints and receive criminal history record information from CJIS. The Z numbers are identified by the alphabetic character Z in the ninth position. Agencies with these ORIs are restricted from accessing NCIC 2000 files or III.

### 1.7 VALIDATION

ORIs are validated on a biennial basis. As part of the NCIC 2000 validation process, each ORI record is contained in a \$.C.administrative message, with all \$.C.administrative messages for a CTA/FSC grouped together in a file. The state CTA/FSC is notified by a \$.B.administrative message that its file is ready for retrieval.

Each state CTA/FSC is responsible for verifying the accuracy of every ORI accessing NCIC 2000 through the respective state/federal system. The validation process includes verifying an Agency's status and authority, as well as the other information listed in the ORI record, e.g., telephone number, street address, and ZIP code.

## **APPENDIX B: FREQUENTLY ASKED QUESTIONS**

**Are there other protocols I can use to send messages to the TIES message switch?**

State agencies are allowed to connect and send/receive messages via web services in certain situations where approved and arranged by TBI.

### APPENDIX C: GLOSSARY & ACRONYMS

The glossary items below are commonly used terms within Tennessee's criminal justice system.

- AFIS
- Arrest Warrant
- Bind Over Order
- Booking Sheet
- BOPP
- CAD
- CAIN
- Capias
- Case Report
- CCH
- Charge
- CHR
- CHRI
- CJIS
- Submitting Agency
- CTA
- DCSO
- Dismissal of Charges
- Expungement Order Form
- FBI
- Automated Fingerprint Identification System that contains the complete Bureau fingerprint files, which provide the certainty of positive identification of every criminal history, and the associated hardware/software required to manage this data.
- A written order issued and signed by a judge directed to an enforcement official commanding them to arrest and incarcerate the body of a person named, who is accused of an offense.
- Indicates that the case was found to have probable cause and should be bond over to a criminal court.
- The booking sheet contains personal information from the Offender such as occupation, domicile, and next of kin.
- The Tennessee Board of Probation and Parole.
- Computer Aided Dispatch
- Criminal Activities Intelligence Network
- A writ or order by the court directing a law enforcement official to take into custody the person named in the writ or order.
- Record of alleged events and circumstances related to the reported incident.
- Computerized Criminal History
- A brief description and coding of the alleged offense(s).
- Criminal History Record of a person who has been arrested and charged with having committed a criminal offense.
- Criminal History Record Information in computerized form.
- Criminal Justice Information System. Unisys developed this court system using PowerBuilder and Oracle databases maintained by the FBI.
- The Agency that is working with the TBI to automate the submission of Final Dispositions. Typically, this will be the Court Clerk's Office, and their Information Systems personnel.
- Control Terminal Agency maintained by the TBI and approved by the FBI/NCIC for the State of Tennessee for control of the TIES network.
- Davidson County Sheriffs Office. Agency in charge of Jail facilities.
- Termination of a case. The court enters an order dismissing a case for cause.
- Used in a legal process where all the court records and other legal records held by public officials are destroyed by order of the court.
- Federal Bureau of Investigation

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- Fingerprint Card
  - Document used to manually capture the fingerprints of an Offender.
- FTP
  - File Transfer Protocol. Protocol for sending data files.
- Full Access
  - A TIES Agency which makes entries into NCIC and TCIC files.
- III
  - Interstate Identification Index – a service provided by NCIC that cross-references criminal history and fingerprint data
- Incident Record
  - The initial information collected that relates to an alleged criminal activity that results in a law enforcement official being aware of an incident or possible dispatched to the scene of the incident.
- Indictment
  - An accusation in writing found and presented by a grand jury to the court. It will charge that person named therein has done some act. Once an indictment is found, no disclosure of this fact may be made until the Offender is arrested.
- JIMS
  - Justice Information Management System
- JIS
  - Justice Integration Services. Agency that oversees CJIS system.
- JMS
  - Jail Management System. Unisys developed this Jail system using PowerBuilder and Oracle databases.
- JSS
  - Justice Support System
- Judgment Order Document
  - Used to record the judgment of a trial proceeding at the state court level. Also called the Judgment Sheet, and Case Judgment Document.
- Law Enforcement Agency (LEA)
  - A governmental Agency having statutory power of arrest whose primary function is that of detection, apprehension, and institution of prosecutions and which allocates more than fifty percent (50%) of its budget to the administration of criminal justice. Includes all police and sheriffs departments and offices.
- LERIS
  - Law Enforcement Records Information System. MPD Document Imaging Process. LERIS is an electronic integrated Imaging process that was developed to capture, distribute, store, and manage documents and related data throughout the Police Department and to others who are authorized to obtain it. This Agency shall begin this process in the Records Section of the Records Division, after official documents have been verified by a reporting officer's supervisor and received as soon as practical.
- LiveScan
  - The computer and software to transmit fingerprints and demographic information of an Offender at booking. The LiveScan system interfaces with the TBI's Automated Fingerprint Identification System (AFIS).
- Message Key
  - Unique identifier field within a message transmitted via TIES from an agency system to NCIC. Nlets, other agencies, or Tennessee criminal justice systems. The field defines the content and data contained within the message. Examples include AM, DQ01, EV, QH, QWA, etc.
- MNPD
  - Metropolitan Nashville Police Department
- NCIC
  - National Crime Information Center, operated by the FBI.
- NIBRS
  - National Incident Based Reporting System.

## Resource Guide: TIES Vendor & Agency Messaging

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- NIST
- NLETS
- Nolle Prosequi
- Non Terminal Agency
- OCA
- ORI
- Probable Cause
- Query Only Access
- Rap Sheet
- Request for Disposition
- RMS
- RNI
- Satellite
- SCN
- SID
- SOR
- STAP / STOP
- Submitting Agency
- TBI
- TBI AFD Program
- National Institute of Standards and Technology.
- National Law Enforcement Telecommunications System is a nonprofit incorporated organization made up of representatives of law enforcement agencies from each of the fifty (50) states, District of Columbia, Puerto Rico, and several federal law enforcement agencies.
- An entry on the record of a legal action denoting that the prosecutor will proceed no further in their action.
- An Agency accessing the TIES by means of a Terminal Agency
- Originating Case Agency Number
- Originating Agency Identifier is a number that is assigned by the TBI/TBI to uniquely describe Law Enforcement agencies nationally. See the Appendix in this resource guide for detailed information about the ORI.
- Probable cause determined by magistrate.
- A TIES Agency that is programmatically prohibited from making entries into the NCIC and TCIC files.
- A chronological criminal history of an individual.
- Triggers the extradition process, may be filed by the authorities in the requesting state or by the fugitive (the person sought).
- Record Management System. RMS system developed by MNPD using mix of COBOL, VB, SQL and Unisys RDMS database.
- Records and Identification Number used by Shelby County and other jurisdiction. Unique identifier for an Offender in that area.
- A Terminal Agency accessing the TIES through another Agency's computer.
- State Control Number. Number required by the TBI that uniquely identifies a booking event. It consists of 5 significant characters of the ORI and a unique 8 character arrest/booking number.
- State Identification Number, a unique identification number assigned by the TBI to each person for whom a criminal history is established pursuant to a fingerprint identification, or a number assigned to any other person for whom a file is required to be maintained by TBI pursuant to law but is not based upon a fingerprint identification.
- Sexual Offender Registry
- Data bytes signaling the beginning and end of a message. Using hexadecimal notation the STAP bytes in order are 0xFF 0x00 0xAA 0x55, and the STOP bytes in order are 0x55 0xAA 0x00 0xFF
- A criminal justice Agency that submits Final Dispositions to the TBI.
- Tennessee Bureau of Investigation
- The TBI's computer program that accesses the Agency FTP Server to poll for Final Disposition Transmission Files. It accesses the Agency Host Computer, polls for new transmission files, transfers the files to the

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TBI/AFD Computer, and processes the records. If errors occur, it kicks them out and sends back to the Agency's computer.

- TBI AFD Server
- TCA
- TCAST
- TCIC
- TCHR
- TCP/IP
- The File Server at the TBI that contains the programs and data to process automated Final Disposition records.
- Tennessee Code Annotated
- The older case management software developed by Local Government for the State of Tennessee.
- Tennessee Crime Information Center, operated by the TBI and required by Chapter 10 of Title 38 of the Tennessee Code Annotated.
- Tennessee Criminal History Repository system
- Transmission Control Protocol (TCP) and Internet Protocol (IP) are two distinct network protocols, technically speaking. TCP and IP are so commonly used together, however, that TCP/IP has become standard terminology to refer to either or both of the protocols.

IP corresponds to the Network layer (Layer 3) in the OSI model, whereas TCP corresponds to the Transport layer (Layer 4) in OSI. In other words, the term TCP/IP refers to network communications where the TCP transport is used to deliver data across IP networks.

The average person on the Internet works in a predominately TCP/IP environment. Web browsers, for example, use TCP/IP to communicate with Web servers.

- TDOC
- Terminal Agency
- TIBRS
- TICIC
- TIES
- TJIS
- TnCIS
- TOMIS
- UCR
- Verdict
- VINE
- Tennessee Department of Correction
- An Agency accessing the TIES by means of a computer system or terminal.
- Tennessee Incident Based Reporting System.
- Tennessee Internet Crime Information Center.
- Tennessee Information Enforcement System is a hardware/software system dedicated to linking law enforcement agencies with one another and/or with databases and transmitting law enforcement information.
- Tennessee Judicial Information System
- Tennessee Court Information System. The new case management software developed by Local Government for the State of Tennessee.
- Tennessee Offender Management Information System
- Uniform Crime Reporting, operated by the FBI.
- A declaration of the truth as to the matter of fact submitted to the jury. The definitive answer given by the jury to the court concerning the matters of fact committed to the jury for their deliberation and determination.
- Victim Information & Notification Everyday

- VisionAIR
- Law enforcement Agency software.



## Resource Guide: TIES Vendor & Agency Messaging

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# Resource Guide: TIES Vendor & Agency Messaging

QWA Response with image inside text with text continuing after:

[\*yNUB\*UNUBNUBYxNULDLENULSOHSHO,áNULNULY\STXBSNULSOH

QWA.TNNCIC000

14:26 08/08/12 00024

14:26 08/08/12 00055 TN0950001

\*MYOPTCON

TXT

TN0950001

\*\*\*MESSAGE KEY QWA SEARCHES ALL NCIC PERSONS FILES WITHOUT LIMITATIONS.

MKE/WANTED PERSON

EXL/1 - FULL EXTRADITION UNLESS OTHERWISE NOTED IN THE MIS FIELD

ORI/NV01899N3 NAM/PERSON, IMA WANTED SEX/M RAC/W POB/WI

DOB/19600101 HGT/600 WGT/200 EYE/BLU HAI/GRY

SKN/ALB

SOC/333224444

OLN/0201917140 OLS/NV OLY/NX

OFF/HOMICIDE - WILLFUL KILL-FAMILY-WEAPON

DOW/20040701 OCA/OCA1234567890

MIS/NO EX, 03F05800X, LEAVE SCENE OF ACC, BAIL \$3000, OCA/021102-1125, CONT DET

MIS/MOON 702 229-3538, OLN IS NV ID CARD

DNA/N

ORI IS DEPT OF PUBLIC SAFETY RECORDS AND TECH DIV 775 684-6262

IMN/I000000511 IMT/I

IMN/I004000739 IMT/M

IMN/I015500471 IMT/I

IMN/I020000423 IMT/I

IMN/I023000441 IMT/I

NIC/W092015506 DTE/20040729 1503 EDT DLU/20040730 0936 EDT

IMMED CONFIRM WARRANT AND EXTRADITION WITH ORI

IMR/DLEdbocNULNUL!YIMR NULNUL!#MNAM:PERSON, IMA WANTED DOB:19600101RAC:W

HGT:600 WGT:200 DOI:20010130 NIC:W092015506 IMN:I004000739

MIS:

08192y0yàNULDLEJFIFNULSOHSHOSONUL`NUL`NULNULyÛNULCNUL SYN CAN ESCAN DC4 ES SUB ES\$"  
&0P40,,0bFJ:PtfzxrfpnE,œ@šnp Úc%ĀİĐİ|šààèš,ĒİyÛNULC SOH"\$§0\*0^44^E,,p,,EEEEEEEEEEEEEEEEEE  
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NULNULSOHENOSOHSHOHSOHSHOHNULNULNULNULNULNULNULNULNULNULNULNULNULSOHSTXETXETIENOACKRETES

More JPG image data follows in the message until the end:

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\*\*\*\*\*  
\*\*\*\*\*abd  
DIE.

\*\*\*RELATED RECORDS\*\*\*

MKE/WANTED PERSON - CAUTION  
CMC/25 - ESCAPE RISK  
EXL/1 - FULL EXTRADITION UNLESS OTHERWISE NOTED IN THE MIS FIELD  
ORI/TNTBI0016 NAM/SHADES, MISTER SEX/M RAC/U POB/AL  
DOB/19900101 HGT/400 WGT/100 HAI/BRO  
SOC/333224444  
OFF/TRESPASSING  
DOW/20060512 OCA/444444  
NOA/N  
MIS/TEST RECORD  
DNA/N  
ORI IS TN BU OF INVESTIGATION ADMIN HQ NASHVILLE 615 744-4600  
IMN/I000500740 IMT/I  
NIC/W920007011 DTE/20060522 0919 EDT DLU/20060522 0922 EDT

MKE/WANTED PERSON  
EXL/1 - FULL EXTRADITION UNLESS OTHERWISE NOTED IN THE MIS FIELD  
ORI/COCBI0000 NAM/BUNNY, BUGS SEX/M RAC/W POB/CA  
DOB/19600101 HGT/400 WGT/100 EYE/BLU HAI/BLN  
SMT/TAT R ARM  
SOC/111111111  
OLN/555555555 OLS/CO OLY/2008  
OFF/FAILURE TO APPEAR - SEE MIS - FAILURE TO APPEAR  
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More text continues to the end:

NIC/W550184742 DTE/20080925 1829 EDT DLU/20080925 1829 EDT  
IMMED CONFIRM WARRANT AND EXTRADITION WITH ORI  
ADDITIONAL HITS AVAILABLE, FILE NOTIFICATION TO FOLLOW  
U\***NUL**]\*]