

AFIS

**Updating the gateway connecting the e-mail system to AFIS, in conformity
with versions 2 and 3 of the ANSI/NIST standard, which correspond to
Interpol versions 2, 3, 4 and 4.22**

Functional specifications of the ANSI/NIST format

for

the gateway connecting the e-mail to AFIS

1. CPS or ATP message with segmented fingerprints (NCB → gateway and gateway → AFIS)

The message requesting a fingerprint search sent in by the NCB must be a CPS (*Criminal Print-to-Print Search* – fingerprint comparison in the context of an offence) or ATP (*Add to Print Collection* – fingerprints to be added to a database) message. The ATP messages are processed in the same way as CPS messages and the sender is informed accordingly.

The message must contain

- 1 type 1 article zone (message heading)
- 1 - 2 type 2 article zones (more detailed information)
- 1 - 14 type article 4 zones (information and image of a finger or set of fingers).

1.1 Type 1 logical record

For type 1 logical records, the gateway is responsible for zones 1.n01 to 1.n015.

Zones (version 4.22)	NCB Interface → Gateway	Zones (version 2)	Gateway Interface → AFIS
1.1 <i>Logical Record Length</i>	<ul style="list-style-type: none"> • Mandatory • To be checked • If incorrect, reject the message 	1.01 <i>Logical Record Length</i>	<ul style="list-style-type: none"> • Mandatory • Must be created
1.2 <i>Version Number ANSI/NIST</i>	<ul style="list-style-type: none"> • Mandatory • Must be 0200 or 0300 • If incorrect, reject the message 	1.02 <i>Version Number</i>	<ul style="list-style-type: none"> • Mandatory • Always put 0200 • Zones 1.1 to 1.12 for version 0200 and 1.1 to 1.15 for version 0300
1.3 <i>File Content</i>	<ul style="list-style-type: none"> • Mandatory • To be checked • If incorrect, reject the message 	1.03 <i>File Content</i>	<ul style="list-style-type: none"> • Mandatory • Copy the contents
1.4 <i>Type of Transaction</i>	<ul style="list-style-type: none"> • Mandatory • Must be CPS or ATP • If incorrect, reject the message 	1.04 <i>Type of Transaction</i>	<ul style="list-style-type: none"> • Mandatory • If not CPS type, convert to CPS • If ATP type, process as CPS and inform sender accordingly
1.5 <i>Date of Transaction</i>	<ul style="list-style-type: none"> • Mandatory • Must be in YYYYMMDD format • If incorrect, reject the message 	1.05 <i>Date of Transaction</i>	<ul style="list-style-type: none"> • Mandatory • Copy the contents

1.6 <i>Priority</i>	<ul style="list-style-type: none"> • Optional • Must be between 1 and 4 for v0200 and between 1 and 9 for v0300 • If incorrect, alert the sender without rejecting the message 	1.06 <i>Priority</i>	<ul style="list-style-type: none"> • Mandatory • Always put 4
1.7 <i>Destination Agency Identifier</i>	<ul style="list-style-type: none"> • Mandatory • Ignore the contents • If missing, alert the sender without rejecting the message 	1.07 <i>Destination Agency Identifier</i>	<ul style="list-style-type: none"> • Mandatory • Indicate XX as destination agency
1.8 <i>Originating Agency Identifier</i>	<ul style="list-style-type: none"> • Mandatory • The correct country code is the one contained in zone 1.8, not in the sender's e-mail address • If missing, alert the sender without rejecting the message 	1.08 <i>Originating Agency Identifier</i>	<ul style="list-style-type: none"> • Mandatory • Indicate the requester's ISO country code (provided by ICIS when the request is made, if the department is authorized)
1.9 <i>Transaction Control Number</i>	<ul style="list-style-type: none"> • Mandatory • Check the format (YYSSSSSSSA), notably the control letter calculated using the indicated algorithm • Put it aside for reference for the return message • If incorrect, alert the sender without rejecting the message 	1.09 <i>Transaction Control Number</i>	<ul style="list-style-type: none"> • Mandatory • Generate a single TCN in YY.SS.SSS.SSS.A format, where YY is the year, SS.SSS.SSS the counter number (beginning at 44.000.000 for type 4 requests) and A is the control letter to be calculated
1.10 <i>Transaction Control Response</i>	<ul style="list-style-type: none"> • Optional • Ignore this zone • Indicate in the response that this zone has been ignored 	1.10 <i>Transaction Control Response</i>	<ul style="list-style-type: none"> • Do not use this zone
1.11 <i>Native Scanning Resolution</i>	<ul style="list-style-type: none"> • Mandatory • Do not test this zone 	1.11 <i>Native Scanning Resolution</i>	<ul style="list-style-type: none"> • Mandatory • Copy the value

1.12 <i>Nominal Transmitting Resolution</i>	<ul style="list-style-type: none"> • Mandatory • Check that the value is between 480 and 520 inclusive • If not, reject the message 	1.12 <i>Nominal Transmitting Resolution</i>	<ul style="list-style-type: none"> • Mandatory • Always indicate the 500 ppp value (i.e. 19,68 pixels/mm)
1.13 <i>Domain name</i>	<ul style="list-style-type: none"> • Optional, if the zone is present, check that the first element of the zone is INT-I. If the second element of the zone is also present, it must be 4 or 4.xx. • If this zone is not filled in correctly, alert the sender without rejecting the message. • INT-I{US}4.22{GS} 		
1.14 <i>Greenwich mean time</i>	<ul style="list-style-type: none"> • Mandatory • CCYMMDDHHMMSZ • If incorrect, alert the sender without rejecting the message 		
1.15 <i>Directory of character sets</i>	<ul style="list-style-type: none"> • Optional • Do not test this zone 		

1.2 Type 2 logical record

For type 2 logical records, the gateway is responsible for zones 2.n01 to 2.n0xxx.

First type 2 record

Zone	NCB Interface → Gateway	Zone	Gateway Interface → AFIS
2.1 <i>Logical Record Length</i>	<ul style="list-style-type: none"> • Mandatory • To be checked • If incorrect, reject the message 	2.001 <i>Logical Record Length</i>	<ul style="list-style-type: none"> • Mandatory • Must be recreated
2.2 <i>Image Designation Character</i>	<ul style="list-style-type: none"> • Mandatory • To be checked (against zone 1.03) • If incorrect, reject the message 	2.002 <i>Image Designation Character</i>	<ul style="list-style-type: none"> • Mandatory • Copy the contents

2.3 <i>System Information</i>	<ul style="list-style-type: none"> • Mandatory • Must be an Interpol version number • If incorrect or missing, alert the sender without rejecting the message 	2.003 <i>System Information</i>	<ul style="list-style-type: none"> • Mandatory • Put 0201
2.4 to 2.xxx	<ul style="list-style-type: none"> • Optional • Ignore the zone and alert the sender accordingly (merely indicate the zone number and its value) 	2.004 to 2.xxx	<ul style="list-style-type: none"> • Above 2.003, the data in type 2 records must not be sent to the AFIS

1.3 Second type 2 record (Optional: the second record must not be sent to AFIS)

Zone	NCB Interface → Gateway	Zone	Gateway Interface → AFIS
2.1 <i>Logical Record Length</i>	<ul style="list-style-type: none"> • Mandatory • To be checked • If incorrect, reject the message 	2.001 <i>Logical Record Length</i>	
2.2 <i>Image Designation Character</i>	<ul style="list-style-type: none"> • Mandatory • To be checked (against zone 1.03) • If incorrect, reject the message 	2.002 <i>Image Designation Character</i>	
2.3 <i>System Information</i>	<ul style="list-style-type: none"> • Mandatory • Must be an Interpol version number • If incorrect, alert the sender without rejecting the message 	2.003 <i>System Information</i>	
2.4 to 2.xxx	<ul style="list-style-type: none"> • Optional • Ignore the zone and alert the sender accordingly (merely indicate the zone number and its value) 	2.004 to 2.xxx	

1.4 Type 4 logical record

- Type 4 logical records must contain between 1 and 14 zones.
- In the absence of a type 4 record, reject the message.
- If a finger or set of fingers is defined more than once (i.e. several type 4 records with the same value in zone 4.04), there is a lack of coherence and the message must be rejected.
- In type 4 records, all the zones are *de facto* mandatory because they are a set length.

Zone	NCB Interface → Gateway	Zone	Gateway Interface → AFIS
4.1 <i>Logical Record Length</i>	<ul style="list-style-type: none"> To be checked If incorrect, reject the message 	4.001 <i>Logical Record Length</i>	<ul style="list-style-type: none"> Copy the contents
4.2 <i>Image Designation Character</i>	<ul style="list-style-type: none"> To be checked (against zone 1.03) If incorrect, reject the message 	4.002 <i>Image Designation Character</i>	<ul style="list-style-type: none"> Copy the contents
4.3 <i>Impression Type</i>	<ul style="list-style-type: none"> Check that the value is between 0 and 9 If 0, 2, 8 or 9, the value of zone 4.004 must be between 11 and 14 If 1, 3, 8 or 9, the value of zone 4.004 must be between 1 and 10 If incorrect, alert the sender without rejecting the message 	4.003 <i>Impression Type</i>	<ul style="list-style-type: none"> If the data are correct and the value is between 0 and 7, copy the contents If the value is incorrect, 8 or 9, and the value of zone 4.004 is between 11 and 14, put 2 If the value is incorrect, 8 or 9, and the value of zone 4.004 is between 1 and 10, put 3.
4.4 <i>Finger Position</i>	<ul style="list-style-type: none"> Check that the value is between 1 and 14 (0 is not authorized) Check that there is only one type 4 zone containing this value If incorrect, reject the message 	4.004 <i>Finger Position</i>	<ul style="list-style-type: none"> Copy the contents
4.5 <i>Image Scanning Resolution</i>	<ul style="list-style-type: none"> Check that the value is 0 If not, alert the sender without rejecting the message 	4.005 <i>Image Scanning Resolution</i>	<ul style="list-style-type: none"> Always set the value at 0
4.6 <i>Horizontal Line Length</i>	<ul style="list-style-type: none"> Check that the value is between 100 and 4000 If not, reject the message 	4.006 <i>Horizontal Line Length</i>	<ul style="list-style-type: none"> Copy the value
4.7 <i>Vertical Line Length</i>	<ul style="list-style-type: none"> Check that the value is between 100 and 4000 If not, reject the message 	4.007 <i>Vertical Line Length</i>	<ul style="list-style-type: none"> Copy the value
4.8 <i>Grey-scale Compression Algorithm</i>	<ul style="list-style-type: none"> Check that the value is 1 If not, reject the message 	4.008 <i>Grey-scale Compression Algorithm</i>	<ul style="list-style-type: none"> Must always be 1
4.9 <i>Image</i>	<ul style="list-style-type: none"> No check 	4.009 <i>Image</i>	<ul style="list-style-type: none"> Copy the contents

2. Message with image (NCB → Gateway) and CPS message with non-segmented prints (Gateway → AFIS)

If an NCB sends a non-segmented image, the gateway must generate the CPS message to be sent to the AFIS.

The CPS message must contain

- a type 1 record (message heading)
- a type 2 record (more detailed information)
- a type 7 record (non-segmented information and image).

2.1 Type 1 logical record

Zone	NCB Interface → Gateway	Gateway Interface → AFIS
1.01 <i>Logical Record Length</i>		<ul style="list-style-type: none"> • Mandatory • To be created
1.02 <i>Version Number</i>		<ul style="list-style-type: none"> • Mandatory • Always put 0200
1.03 <i>File Content</i>		<ul style="list-style-type: none"> • Mandatory • To be created
1.04 <i>Type of Transaction</i>		<ul style="list-style-type: none"> • Mandatory • CPS or ATP value
1.05 <i>Date of Transaction</i>		<ul style="list-style-type: none"> • Mandatory • Indicate the day's date
1.06 <i>Priority</i>		<ul style="list-style-type: none"> • Mandatory • Put 4
1.07 <i>Destination Agency Identifier</i>		<ul style="list-style-type: none"> • Mandatory • Put XX
1.08 <i>Originating Agency Identifier</i>		<ul style="list-style-type: none"> • Mandatory • Indicate the requester's ISO country code (provided by ICIS when the request is made, if the department is authorized)
1.09 <i>Transaction Control Number</i>		<ul style="list-style-type: none"> • Mandatory • Generate a single TCN in YY.SS.SSS.SSS.A format, where YY is the year, SS.SSS.SSS is the counter number (beginning at 77.000.000 for type 7 requests) and A is the control letter to be calculated

1.10 <i>Transaction Control Response</i>		<ul style="list-style-type: none"> • Do not use this zone
1.11 <i>Native Scanning Resolution</i>		<ul style="list-style-type: none"> • Mandatory • Indicate the 500 ppp value (i.e. 19.68 pixels/mm)
1.12 <i>Nominal Transmitting Resolution</i>		<ul style="list-style-type: none"> • Mandatory • Indicate the 500 ppp value (i.e. 19.68 pixels/mm)

2.2 Type 2 record

Zone	NCB Interface → Gateway	Gateway Interface → AFIS
2.001 <i>Logical Record Length</i>		<ul style="list-style-type: none"> • Mandatory • To be created
2.002 <i>Image Designation Character</i>		<ul style="list-style-type: none"> • Mandatory • To be created, coherent with zone 1.03
2.003 <i>System Information</i>		<ul style="list-style-type: none"> • Mandatory • Put 0201
2.004 to 2.085		<ul style="list-style-type: none"> • Do not use zones above 2.003

2.3 Type 7 logical record

The image sent must meet the following criteria:

- It must have been compressed using the JPEG algorithm
- It must have been digitized to about 500 ppp, i.e. between 480 and 520 ppp
- It must have been digitized with 256 shades of grey, i.e. one octet of information per digitized pixel
- It must be about A4 size, i.e. 413 x 584 pixels with a tolerance of + or -20%.

If this is not the case, the message will be rejected.

In type 7 records, all the zones are de facto mandatory, because they are a set length.

Zone	NCB Interface → Gateway	Gateway Interface → AFIS
7.001 <i>Logical Record Length</i>		<ul style="list-style-type: none"> To be created
7.002 <i>Image Designation Character</i>		<ul style="list-style-type: none"> To be created coherent with zone 1.03
7.003 <i>Image type</i>		<ul style="list-style-type: none"> Indicate value 2
7.004 <i>Image Description</i>		<ul style="list-style-type: none"> Indicate value 50
7.005 <i>Pattern Classification</i>		<ul style="list-style-type: none"> Indicate value 0 (10 octets to 0)
7.006 <i>Image Capture Resolution</i>		<ul style="list-style-type: none"> Indicate value 500 ppp (19.68 pixels/mm)
7.007 <i>Horizontal Line Length</i>		<ul style="list-style-type: none"> Indicate the horizontal number of pixels
7.008 <i>Vertical Line Length</i>		<ul style="list-style-type: none"> Indicate the vertical number of pixels
7.009 <i>Grey-scale Compression Algorithm</i>		<ul style="list-style-type: none"> Indicate value 8 (JPEG)
7.010 <i>Image Data</i>		<ul style="list-style-type: none"> Insert the image

3. AFIS → Gateway SRE Message

The message is specified in the document "Specifications of External Interfaces".

4. AFIS → Gateway ERR Message

The message is specified in the document "Specifications of External Interfaces".