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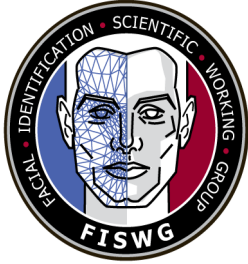
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Section 4.4 Bulk Data Transfer

35 **Facial Recognition System: Bulk Data Transfer**

36

37 This document provides information on **Bulk Data Transfer** as it applies to
 38 deploying, operating, or supporting a Facial Recognition System (FRS). The
 39 goal of this document is to provide suggestions, guidance, and examples on
 40 how to effectively and efficiently transfer large amounts of facial data
 41 between agencies. The intended audience of this document is anyone
 42 involved in the design, deployment, operational support, or operational
 43 usage of an FRS.

44

45 A prerequisite to successful bulk data transfers start with appropriate
 46 agreements between the data owner and recipient. While the specific
 47 agreement must be appropriate to the parties involved, parties should
 48 consider the level of exchange and applicable rules, regulations, laws,
 49 policies, financial impacts and any associated risks. Agreements can
 50 materialize in various formats based upon agency operational policies and
 51 procedures. Examples include:

- 52 • Memorandum of Understanding (MOU)
- 53 • Memorandum of Agreement (MOA)
- 54 • Letter of Intent
- 55 • Contract

56

57 **Bulk Data Transfer**

58

59 Within this context, bulk data consists of two types of data:

- 60 • Image data is the actual facial imagery.
- 61 • Textual data is the non-image data associated with each facial image
 62 (including metadata).

63

64 There are many circumstances where large amounts of data may need to be
 65 exchanged:

- 66 • Enrollment: Facial data is given to another system for enrollment.
- 67 • Searching: Facial data is given to another system for searching only.
- 68 • Data analysis: Facial data is exchanged for the purpose of analysis.

69 Once legal and policy issues have been addressed, the data owner and
 70 recipient should consider appropriate documentation to guide the mechanics
 71 of the data transfer. Parties should consider the operational flow of the data
 72 from their unique perspectives resulting in a checklist appropriate for the
 73 planned transfer of data. The magnitude and complexity of the resultant
 74 documents will vary based on the data transfer needs. Examples include:

- 75 • Interface Control Documents (ICDs) to ensure interoperability by
 76 specification of connectivity, messaging, search volumes and technical
 77 aspects. Where appropriate, security requirements and transport
 78 mechanisms should be specified.
- 79 • Service Level Agreements (SLAs) detailing various aspects of
 80 performance, reports or results expected, timeframes, or other
 81 deliverables expected. If specific performance criteria, on-going or
 82 continual exchanges, or specific termination criteria is required, these
 83 points should be identified within the SLA.

84 **DATA Owner:**

85

86 The following areas need to be discussed as roles and responsibilities of the
 87 data owner:

88

- 89 • Ensure security classifications are met.
 - 90 ○ As the data owner, the supplier of the data in the transfer is totally
 91 responsible for what data is presented for transfer.
 - 92 ○ Any storage, labeling or packaging of the data must meet the
 93 proper policy of both agencies.
- 94 • Define processing parameters for each transferred image.
 - 95 ○ If there are various assumptions about what is to be done with the
 96 data when received (e.g. enroll, search, analyze, etc.), then this
 97 information needs to be clearly delineated and presented to the
 98 recipient.
- 99 • Meet any data management criteria agreed upon prior to transfer to the
 100 recipient, including facial imagery and any demographic or textual
 101 filtering. For example:
 - 102 ○ Apply quality based filters as agreed, such as inter-eye distance,
 103 file size or pose.
- 104 • Verify that each image transferred is accompanied with the agreed
 105 demographic context.
 - 106 ○ All mandatory demographic/metadata field information is provided
 107 in the agreed upon format and appropriately linked to each image.
 - 108 ○ Multiple images of the same person are acknowledged.

- 109 • Submit images in an accepted format via a mutually agreed mechanism
- 110 (CD, DVD, HDD, Secure File Transfer, etc.).
- 111 • Designate a Point of Contact (POC) for issues and concerns related to the
- 112 bulk data transfer.
- 113 ○ Manage updates to the data after delivery.
- 114 ○ Receive feedback on any errors or issues with the data.
- 115

116 **DATA Recipient:**

117
118 The following areas need to be discussed as roles and responsibilities of the
119 data recipient.

- 120
- 121 • Designate a POC for issues and concerns related to the bulk data transfer.
- 122 ○ Manage updates to the data after delivery.
- 123 ○ Provide feedback on any errors or issues with the data.
- 124 • Receive images in the accepted format via the mutually agreed
- 125 mechanism (CD, DVD, HDD, Secure File Transfer, etc.).
- 126 • Evaluate the data to ensure it meets any agreed criteria.
- 127 ○ Filter the images for non-compliant face images.
- 128 ○ Filter the data for any non-compliant demographic text.
- 129 ○ As applicable, provide human review of data.
- 130 ○ Provide a response as to the result of the data review.
- 131 • Provide final results as agreed upon after enrollment and/or searching is
- 132 completed.
- 133 • Close out activities as per the bulk transfer agreements.
- 134
- 135

136 **Examples:**

137
138 Although there is an expected wide variance in data exchange scenarios
139 between agencies based on their individual needs, several examples follow.

- 140
- 141 1. Agency 1 wishes to transfer 500,000 facial images to Agency 2 for
- 142 enrollment.
- 143 a. An MOU is created and signed. (subject to applicable rules,
- 144 regulations, laws and policies)
- 145 b. An Electronic Biometric Transfer Specification (EBTS) file
- 146 format is agreed upon using ANSI NIST ITL 2007 specifications.
- 147 c. Transfer media and mechanisms meeting the security
- 148 requirements of both agencies are agreed upon.
- 149 d. Agency 1 creates the EBTS files and loads them into the transfer
- 150 process. An EBTS file manifest is created and sent with the
- 151 data.

- 152 e. Agency 2 receives the data and uses the manifest to verify all
 153 files are received and readable.
- 154 f. The frontal facial data is extracted from the EBTS files and
 155 enrolled in the facial repository of Agency 2.
- 156 g. Agency 2 creates a probe report and sends it to Agency 1
 157 detailing what facial imagery was enrolled and what errors
 158 occurred during the enrollment.
- 159 h. Agency 2 maintains the data for two years as stated in the MOU.
 160
- 161 2. Agency 4 requests a complete transfer of 8M images from Agency 3 for
 162 search only.
- 163 a. An MOA is created and signed. (subject to applicable rules,
 164 regulations, laws and policies)
- 165 b. It is agreed that images are supplied in JPEG format with textual
 166 information in comma-separated-value (CSV) files.
- 167 c. Transfer media and mechanisms meeting the security
 168 requirements of both agencies are agreed upon.
- 169 d. Agency 3 extracts the JPEG images, creates the CSV files, and
 170 loads them into the transfer process.
- 171 e. Agency 4 receives the data and reads all CSV files, verifying data
 172 is properly formatted and all JPEG files are linked to rows within
 173 the CSV files.
- 174 f. The facial imagery is paired with the textual information and
 175 enrolled in the facial repository of Agency 4.
- 176 g. Agency 4 creates an enrollment report and sends to Agency 3
 177 detailing what facial imagery was enrolled and what errors
 178 occurred during the enrollment.
- 179 h. Agency 4 deletes the data as stated in the MOA.
 180
- 181 3. Agencies 5 and 6 wish to start a monthly transfer of a facial Watchlist
 182 which has in excess of 50,000 images.
- 183 a. An MOU is created and signed. (subject to applicable rules,
 184 regulations, laws and policies)
- 185 b. Since this bulk transfer will be a monthly process, an ICD and
 186 SLA is created and signed.
- 187 c. ICD:
- 188 i. The EBTS file format is agreed upon using ANSI NIST ITL
 189 2011 specifications.
- 190 ii. Transfer media and mechanisms meeting the security
 191 requirements of both agencies are agreed upon.
- 192 iii. Each update will include all EBTS files on the Watchlist.
- 193 iv. The EBTS files will have a manifest which lists: 1) All files,
 194 2) new files, 3) updated files, 4) deleted files.

- 195 d. SLA:
196 i. Agency 5 will provide the data no later than the fifth day of
197 each month.
198 ii. Agency 6 will supply a response from processing within
199 five days of transfer.
200 e. Agency 5 creates the EBTS files and loads them into the transfer
201 process. An EBTS file manifest is created and sent with the
202 data.
203 f. Agency 6 receives the data and uses the manifest to verify all
204 files are received and readable.
205 g. The frontal facial data is extracted from the EBTS files and
206 enrolled in the facial repository of Agency 6.
207 h. Agency 6 creates a report and sends to Agency 5 detailing what
208 facial imagery was enrolled, updated, deleted, and what errors
209 occurred during the processing.
210 i. Agency 5 reviews the errors and communicates with Agency 6 on
211 how to address them.
212 j. The transfer is repeated each month.
213

214 **Reference List**

215
216 FISWG documents can be found at: www.FISWG.org
217

218 ANSI/NIST-ITL Standard Homepage:
219 http://www.nist.gov/itl/iad/ig/ansi_standard.cfm
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