Ministry of JUSTICE

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# Interface Control Document: CJSE - RB (Secure Government Network FTP)

Not protectively marked

# Contents

# 1. Introduction

## 1.1 Document purpose

This document describes the DBS eBulk interface between the Criminal Justice System Exchange (CJSE) and Registered Bodies' (RBs) in terms of the messages destined for the Disclosure & Barring Service (DBS). The eBulk interface described in this document provides for the exchange of files between the CSJE and RBs systems using the File Transfer Protocol (FTP) over a secure government network such as the GSI.

The document has a target audience of:

- DBS / Registered Body (RB) Project Teams
- implementers, developers and technical architects of the communicating endpoints
- testers of the interface
- readers who wish to gain a technical understanding of the interface

## 1.2 Scope

### 1.2.1 In scope

This document is concerned only with the interface between the CJSE and Registered Bodies' systems using Government Secure Networks. Only messages supported in the scope of the DBS project release 1 as defined in the DBS e-Bulk Interface *Business Process Document* [eBulk] are described by this document.

### 1.2.2 Out of scope

This specification does not:

- cover "end-to-end" message exchanges, where communication between the CJSE and RBs is part of a larger message exchange including other systems
- mandate the underlying technology platform of the endpoint implementations
- specify the manual administrative procedures that may need to be carried out when this interface is implemented as part of a specific system
- specify the scalability, sizing, performance or reliability requirements; these are documented for the CJS Exchange in the *Exchange DBS Solution Architecture*
- Cover the interface that RBs will use for connecting to the CJSE via the Internet[1]

## 1.3 Document organisation

This document is organised in three sections, as follows:

| Section | Contents |
|---|---|
| 1. Introduction | Gives a brief introduction to the CJSE to RB interface |
| 2. Interface Overview | Covers background information about the interface endpoints and the requirements and constraints which drive the technical specification. |
| 3. Interface Details | Describes the FTP interface in terms of initiation of file transfer, directory structures and file naming conventions. |
| 4. CJSE Configuration Details | Describes the internal configuration required by the CJSE. This section does not need to be read by the DBS / RB audience. |

**Table 1-1: Document Organisation**

[1] This interface is described in a separate ICD document - ICD CJSE-DBS RB (Internet FTPS).

## 1.4 Glossary and abbreviations

### 1.4.1 Notational conventions

The keywords "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC2119 [RFC2119].

| Term | Meaning |
|---|---|
| ASYNCH | Asynchronous - two-way communication that occurs with a time delay, allowing connected parties to respond at their own convenience. |
| CJO | Criminal Justice Organisation |
| CJS | Criminal Justice System |
| CJSE | Criminal Justice System Exchange |
| DBS | Disclosure & Barring Service. Refers to both the agency of the Home Office and to its IT programme, dependent on the context |
| ExISS | Exchange Integration Services Stream |
| GSI | Government Secure Intranet |
| HTTP | Hypertext Transfer Protocol |
| ID | Identifier |
| IETF | Internet Engineering Task Force (http://www.ietf.org/) |
| IP | Internet Protocol |
| MDI | Message Delivery Interface. Specification for message transport layer for the CJSE, provided by CJIT. |
| OI | Operational Interface. Specification for operational layer for the CJSE, provided by CJIT. |
| OSI | Open Systems Interconnect. A notional model for layering of network protocols, with seven layers from Physical to Application. |
| PID | Project Initiation Document |
| RB | Registered Body. A party authorised by the Disclosure & Barring Service to apply to the DBS for disclosures. |
| RFC | Request for comments maintained by the IETF Secretariat (http://www.ietf.org/rfc.html) |
| TCP | Transmission Control Protocol |
| XML | Extensible Markup Language |

**Table 1-2: Glossary**

## 1.5 Reference Documents

| Document ID | Document Title | Source | Version |
|---|---|---|---|
| FTPMDI | CJSE Message Delivery Interface Specification - FTP | CJIT | 2.1 |
| WSMDI | X009a CJSE v3.1 (ExISS R1) Message Delivery Interface Specification | CJIT | 1.3 |
| OI | X009b CJSE v3.1 (ExISS R1) Operational Interface Specification | CJIT | 1.2 |
| SID | System IDs Data Standards Constrained Values | CJIT Data Standards | 3.6 |
| RFC2119 | Key words for use in RFCs to Indicate Requirement Levels. March 1997. (http://www.ietf.org/rfc/rfc2119.txt) | IETF | |
| eBulk | e-Bulk Interface Business Process Document | DBS | 0.4 |
| BMS | e-Bulk Business Message Specification | DBS | 0.4 |
| ICD DBS | ICD CJSE DBS CRM | CJIT | 0.8 |
| ICD RB | ICD CJSE RB (Internet FTPS) | CJIT | 2.2 |

**Table 1-3: Reference Documents**

# 2. Interface overview

## 2.1 Participating systems

### 2.1.1 CJSE

The CJSE provides a common base for connectivity and information exchange between Criminal Justice Organisations (CJOs), allowing systems based on different technology platforms to be integrated uniformly and offering a variety of messaging services such as transformation, reliability and routing so that this functionality is standardised across the Criminal Justice System (CJS). The CJSE is owned by Ministry of Justice ICT Exchange Services (MoJ ICT ES) and comes under the umbrella of the CJS Exchange Programme.

### 2.1.2 Registered Bodies

Registered Bodies are those parties authorised by the Disclosure & Barring Service to submit applications for criminal records check and receive disclosure of relevant details.

The interface between Registered Bodies and the Exchange forms part of a series of interactions known as the e-Bulk interface. More details may be found in the e-Bulk Interface *Business Process Document* [eBulk].

Each Registered Body has its own IT system and these IT systems will be different for each Registered Body. However, all RB systems connected to the CJSE via a secure government network will use the same interface, as described in this document, the associated *Business Process Document* [eBulk] and *Business Message Specification* [BMS]. CJIT Data Standards will allocate a System Identifier to all RB systems connecting to the CJSE. The System Identifiers[2] allocated to RBs will be held together with other System Identifiers used by the CJSE. Note that this ICD is only applicable to Registered Bodies connecting to the CJSE via secure government networks. The CJSE-DBS RB (Internet) ICD describes the interface for Registered Bodies using the Internet.

## 2.2 Interface Purpose

The messages in this interface are designed to support business processes as documented within the *e-Bulk Interface Business Process Document* [eBulk]. This does not preclude use of this same interface to support other processes.

The business level messages supported by the interface are defined in the eBulk Business Message Specification [BMS]. It is beyond the scope of this document to specify how the business messages should be created, populated with data and validated. However it is RECOMMENDED that message formatting is validated before leaving Registered Bodies' system boundaries.

The table below summarises the messages sent between RB systems and the CJSE.

| Message type | Data Type | Message Name | Description | Sender | Receiver |
|---|---|---|---|---|---|
| CRB01 | XML/text | eBulkApplicationsBatch | Disclosure applications | RB | CJSE |
| CRB02 | XML/text | eBulkApplicationsBatchRejection | Used to indicate an error condition (such as schema validation failure) encountered by DBS when processing the file. | CJSE | RB |
| CRB03 | XML/text | eBulkApplicationReceiptsBatch | Application Acknowledgements | CJSE | RB |
| CRB04 | XML/text | eBulkResultsBatch | Results of Disclosure processing | CJSE | RB |

[2] The list of RB System ID values currently allocated can be found in the DBS CRM ICD.

**Table 2-1 Business Messages**

All business level data definitions are controlled and managed through the DBS's *Business Message Specification* [BMS].

# 3. Interface Details

The diagram below shows how the messages flow between the two systems.

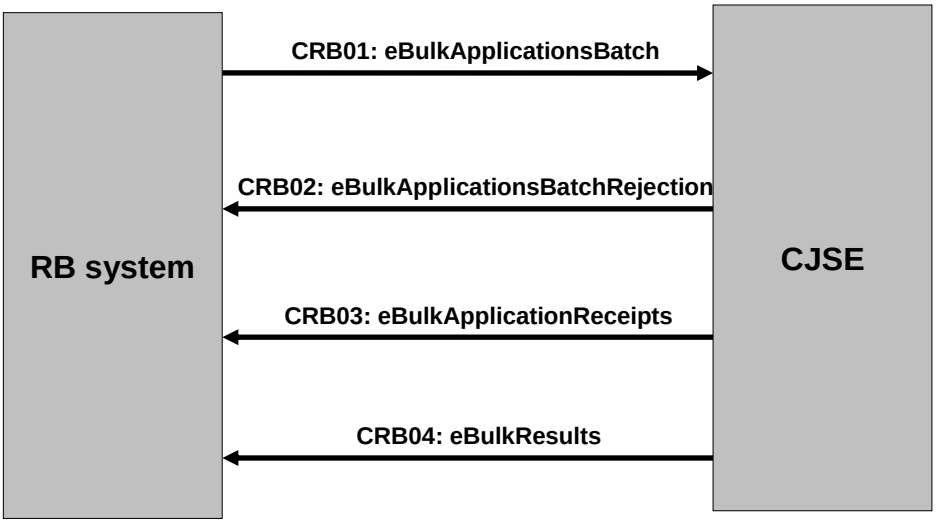


**Figure 3-1: Business Message Flow**

All business messages transferred from RB systems to CJSE and from CJSE to RB systems will be transferred as files using the File Transfer Protocol (FTP) across a secure government network. The specification for general use of the FTP delivery mechanism offered by the CJSE is given in the CJSE Message Delivery Interface Specification for FTP [FTPMDI].

## 3.1 Push and Pull methods

For all business messages originating from RB systems, the Push method SHALL be used (i.e. the RB system initiates the transfer with the FTP put command).

For all business messages being sent to RB systems by the CJSE, the RB system SHALL use the Pull method (i.e. Registered Body initiates the transfer with the FTP get command).

There is no specific schedule for the transfer of files between RBs and the CJSE and therefore the CJSE should expect RBs to connect to the CJSE at any time. Note that there may be more than one file per day.

## 3.2 File and directory naming

This section specifies the FTP directory and file names on the CJSE FTP server for each message type. The sender of the business message MUST conform to the following rules for file naming. Note that there are no blank spaces in the filenames below and underscore characters are used to separate parts of the filename. Files originating from RBs have the prefix “RB_” while those originating from DBS have the prefix “DBS_”. The CJSE will retain the original file name for the files that it delivers to the DBS. For files that are delivered to the CJSE by the RB the CJSE will make the files available to DBS with the original RB file names. Note that the CJSE will not process duplicate files. Files that have the same name and size are considered to be duplicates.

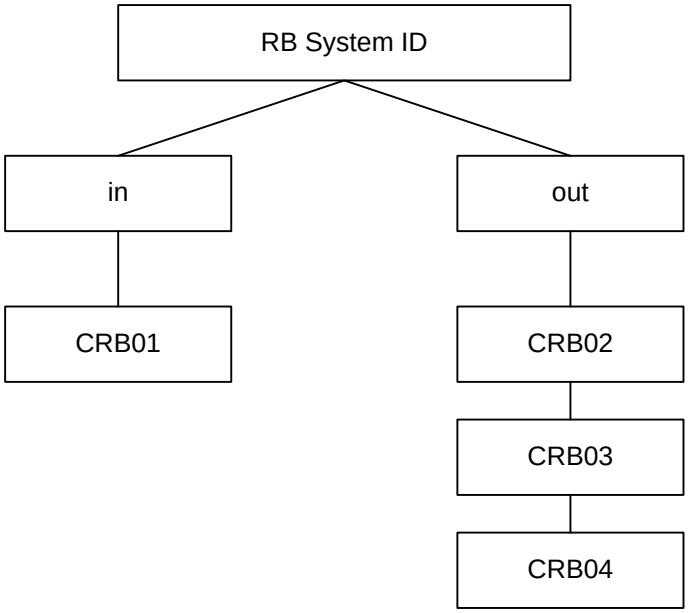


**Figure 3-2: RB Directory Structure**

### 3.2.1 Sending Files

The directory structure on the CJSE FTP server for files sent from RBs to the CJSE will have the structure:
***/<RB System ID>/in/<Message Type>***
An example of this input directory is */XXX /in/CRB01* where XXX is an RB System ID.

Files placed into the input directory by RBs will be named as follows:
***RB_< DBS RB Reference Number>_<Message Type>_<Message ID >_<DateTime>.xml***
An example of a file placed in this directory is *RB_01234567890_CRB01_91012345_20070102030505.xml*

### 3.2.2 Receiving Files

The directory structure on the CJSE FTP server for files destined for the RBs will have the format:
***/<RB System ID>/out/<Message Type>***
An example of this output directory is */XXX/RB_01234567890/out/CRB02* where XXX is an RB System ID.

Files placed into the output directory by the CJSE will be named as follows:
***DBS_ < DBS RB Reference Number>_<message type>_<Message ID>_<DateTime>.xml***
An example of a file placed in this directory is *CRB_01234567890_CRB02_78012345_20070102030505.xml*

The <> components in the above structures have the meanings defined in the table below.

| Component | Meaning |
|---|---|
| <RB System ID> | A System ID allocated by CJIT Data Standards. Each RB will be allocated a unique value. The list of RB System ID values currently allocated can be found in the DBS CRM ICD. Each RB will be notified of their System ID and FTP account details separately. |
| <Message Type> | A 5-digit code identifying the type of message being sent, as defined in Table 2-1 on page 7 above. |
| <DBS RB Reference Number> | DBS provided identifier (11 digits) that uniquely identifies an RB system. |
| <Message ID> | An 8 digit identifier (such as an incrementing number) provided by the originator of the message for the logical grouping of business elements in the batch (e.g. a batch of eBulkApplications). See the DBS Business Message Specification for further details on Message ID. |
| <DateTime> | Date/time at which the file was written in the format YYYYMMDDHHMMSS. |

**Table 3-2: Key to directory and file name components**

## 3.3 Additional Interface Details

### 3.3.1 FTPMDI

Further details on the CJSE FTP interface can be found in the referenced CJSE Message Delivery Interface Specification FTP [FTPMDI] document. A summary of the key points applicable to RB interface follows:

- Files being delivered to the CJSE (FTP put) must initially be created with a "-" suffix [FTPMDI 2.3.2]
- Systems that poll for files must ignore files with a "-" suffix
- A flag file must be created in the out directory for each retrieved file (FTP get) [FTPMDI 2.1.2]

### 3.3.2 Restricted Information

The FTP User Name, RB System ID, Password, DBS RB Reference Number, IP address and other details related to the security of the connection between the CJSE and RBs are not defined in this document. These details will be documented in separate restricted documents that are specific to each RB.

### 3.3.3 Business Message Specification

The business level messages supported by the interface are defined in the eBulk Business Message Specification [BMS]. It is desirable that all business messages processed by the CJSE conform to the CJS Data Standards Catalogue but this a recommendation and not an essential requirement for this interface. It is beyond the scope of this document to specify how the business messages should be created, populated with data and validated. However it is RECOMMENDED that message formatting is validated before leaving Registered Bodies' system boundaries as this will not be performed by the CJSE.

### 3.3.4 Interchange Agreements

An Interchange Agreement (IA) will need to be created in order to record respective intentions and expectations of each party involved in the interface. Interchange Agreements are the responsibility of the data owner (DBS) and define the high level information management requirements of connection between two parties in terms of:

• The purpose of data sharing
• The parties to the data sharing
• The business processes necessary to support data sharing
• The volumetrics / Frequency of data sharing
• The delivery mechanism
• The service management
• Any Standards / Policies / Legislation (as applicable) that apply
• Contact Details of key stakeholders

### 3.3.5 Service Level Agreement

A Service Level Agreement (SLA) will need to be in place to formally describe the level of service that the CJSE is required to provide to DBS and the RBs. The SLA is the responsibility of CJIT Service Delivery.

The remaining sections of this document are only relevant to the CJSE end of the interface and included here for completeness.

# 4. CJSE Configuration Details

This section of the ICD describes the configuration of internal CJSE components that are required for the processing of FTP messages. It is not applicable to RBs but is included here for CJIT purposes.

The business level messages supported by the interface are defined in the eBulk Business Message Specification [BMS]. It is beyond the scope of this document to specify how the business messages should be created, populated with data and validated. However it is RECOMMENDED that message formatting is validated before leaving Registered Bodies' system boundaries.

## 4.1 Protocol stack overview

This section shows the interface between CJSE and Registered Bodies' systems as a conceptual protocol stack, similar to the OSI stack. Business content will be batched as messages (document sets) within an envelope. The mandatory and optional components of each envelope are dependent on the business message being routed.
The following sections define the specifications for each protocol layer.

| | |
|---|---|
| Business level (content) | eBulkApplicationsBatch (XML), eBulkResultsBatch (XML) etc |
| Operational | X009b CJS Exchange ExISS Operational Interface Specification v2.1 [OI]<br>Parameters derived from filename/directory |
| Reliable Message Delivery | CJSE (ExISS r1) Message Delivery Interface Specification – FTP v1.2 [FTPMDI]<br>Parameters derived from filename/directory |
| Transport | TCP |
| Network | IP |

**Figure 4-1: Protocol Stack**

## 4.2 Mapping from FTP to CJSE Message Delivery Submit Message (CJSE function)

In order for the CJSE to correctly track incoming messages, messages which arrive on the FTP delivery mechanism must be wrapped in a Message Submission Request as specified in [WSMDI]. The CJSE must perform this task on behalf of the sender.

This section describes how the CJSE creates a Message Submission Request based on the FTP transfer of a business message. Details of Organisational Unit and System Identifiers can be found in the DBS CRM ICD.

The table below shows the mandatory elements of a SubmitRequestMes XML document. The namespace used for all elements is "http://schemas.cjse.gov.uk/endpoint/types".

| Element | Derived from |
|---|---|
| requestID | CJSE generated identifier for this request |
| sourceID | Source system's System ID |
| destinationID | Destination system's System ID |
| execMode | CJSE must supply the value "ASYNCH" |
| Timestamp | CJSE must supply a value which corresponds to the time at which the SubmitRequestMes document was created by the CJSE. |
| message | The Operational Request being delivered to the CJSE, encoded as per [WSMDI], section 6.3.1. |

**Table 4-2: Mandatory elements in SubmitRequestMes**

## 4.3 Mapping from FTP to CJSE Operational Interface (CJSE function)

In order for the CJSE to correctly track incoming messages for statistical purposes, messages which arrive on the FTP delivery mechanism must be wrapped in an Operational Request before arrival at the CJSE routing subsystem so that they can be correctly routed to their final destination. (Note that [FTPMDI] states that only one operation is supported on this interface: RouteData). In other words, the CJSE FTP delivery mechanism subsystem must create a message wrapper for the inbound message on behalf of the sending system.

This section describes how the CJSE creates an Operational Request based on the FTP transfer of CRB01 business message from RBs into the CJSE. The generic rules for the mapping are given in [FTPMDI] and are not repeated here.

The table below shows the mandatory elements and attributes of a cjseOperations:RouteData request (based on the specification in [OI]). In the "derived from" column, the rules for deriving the value to populate the request are given. Namespace prefixes are not given, as the reader is assumed to have access to the schemas which define this XML structure. In the "element/attribute" column, full stops indicate that the string following is the name of a sub-element of the preceding element; the "@" symbol indicates that the string following is an attribute name.

| Element/attribute | Derived from |
|---|---|
| RouteData@VersionNumber | Fixed value: "1.0" |
| RouteData@RequestResponse | Fixed value: "Request" |
| RequestFromSystem@VersionNumber | Fixed value: "1.0" |
| RequestFromSystem.CorrelationID | Hash of file name and file size |
| RequestFromSystem.SystemID | Source system's System ID |
| RequestFromSystem.OrganizationalUnitID | CJSE must populate with a value representing the RB. |
| DataStream@VersionNumber | Fixed value: "1.0" |
| DataStream.System | As for RequestFromSystem.SystemID |
| DataStream.DataStreamType | CJSE must populate based on <message type> component of the inbound filename, as defined above in Table 2-1. |
| DataStream.SystemDataStreamID | System generated in a similar fashion to CorrelationID above but not specific to DBS interface. See FTP MDI document for further details. |
| DataStream.DataStreamContent | The business message escaped as per rules in [OI] so that special XML characters appear as XML entities |
| Routes@VersionNumber | Fixed value: "1.0" |
| Routes.Route@VersionNumber | Fixed value: "1.0" |
| Routes.Route.RouteID | Fixed value: "001" |
| Routes.Route.RouteSourceSystem | Same as RequestFromSystem.SystemID |
| Routes.Route.RouteDestinationSystem | Destination system's System ID |

**Table 4-3: Mandatory elements in RouteData request**

The table below shows schema-optional elements populated by CJSE.

| Element/attribute | Derived from |
|---|---|
| DataStream.ContentType | CJSE must supply the value "text/xml" |
| DataStream.Reference | Filename of the incoming file |
| DataStream.ReferenceType | CJSE must supply the value "Filename" |

**Table 4-4: Optional elements in RouteData request**

## 4.4 Mapping from CJSE Operational Interface to FTP (CJSE function)

The CJSE will obtain the directory and filename for CRB02, CRB03 and CRB04 messages destined for the RB systems from the inbound messages received from the original sender (ie CRM). This will be stored as the value of the DataStream.Reference element of the inbound Operational Request (RouteData).

## 4.5 Mapping from CJSE Message Delivery Interface to FTP (CJSE function)

There is no requirement to map the XML message delivery interface (MDI) messages received on other CJSE inbound interfaces to the FTP delivery mechanism when it is used for outbound messages.