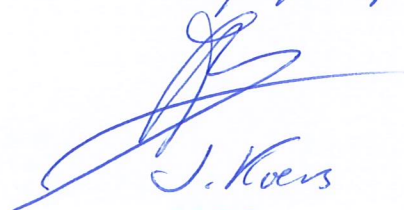


## **GVB Traveler Information SPOT InTraffic Data Delivery Agreement (DDA)**

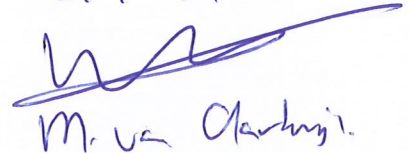
Confidentiality level

Public

16/2/2017

A handwritten signature in blue ink, appearing to be "J. Koers", is written over the date.

21/12/16

A handwritten signature in blue ink, appearing to be "Mr. van der Horst", is written over the date.



## Colophon

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### Department responsible for this document

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### Version information

|     |            |                                                                     |
|-----|------------|---------------------------------------------------------------------|
| 0.1 | 2015-09-02 | Initial                                                             |
| 0.2 | 2015-09-03 | Review processed                                                    |
| 0.3 | 2015-12-04 | New version specifically for SPOT InTraffic after test data review. |
| 0.4 | 2016-22-09 | Review GVB to finalize                                              |
| 1.0 | 2016-10-11 | Document finalized                                                  |

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# 1 Introduction

Purpose of this document is to describe the transmission of data between the SPOT system of InTraffic and GVB. The data required will be used to monitor the quality of the travel information provided to the customers of GVB. That perceived quality depends on various systems, including SPOT.

To ensure consistent transmission of the required data, this data delivery agreement is drafted between InTraffic and GVB. It outlines the technical format of the data, the quality and distribution and it describes the data elements/ fields required.

## 1.1 Content summary

Chapter 2 contains the formal agreement between the parties involved.

Chapter 3 describes the technical format in which the data is delivered.

Chapter 4 contains the outline of the data quality requested and the responsibilities of both parties, including contact information of both.

## 2 Agreement

This document is drafted to formalize agreements made pertaining to the delivery of data from InTraffic to GVB. By signing this document, both parties involved explicitly commit themselves to working together in order to achieve the best service for GVB.

To meet this goal, each party agrees to accept the responsibilities outlined in this document.

The agreement comes into effect on the day it is signed by representatives of both parties. This DDA is valid as long as a Service Level Agreement SPOT is in place between GVB and InTraffic, or until explicitly canceled by mutual consent of both signing parties. Cancellation of this agreement has no effect on any other obligation that arises from other contracts or agreements.

By signing this document signees declare to have fully read this data delivery agreement (DDA), that the contents outlined are clear and that they consent to its contents.

|                   | <b>Delivering party (InTraffic)</b> | <b>Receiving party (GVB)</b> |
|-------------------|-------------------------------------|------------------------------|
| <b>Name</b>       | E. van Dijk                         | Ellen Swinkels               |
| <b>Function</b>   | Business Unit manager               | Manager Commercie            |
| <b>Department</b> | OV Stad Streek                      | Commercie                    |
| <b>Date</b>       |                                     |                              |
| <b>Signature</b>  |                                     |                              |

## 3 Data description

### 3.1 File format

The data file is requested in flat file format. GVB prefers to keep the format similar to other interfaces in this project. Character set requested to be Windows CP1252, but UTF-8 is also possible. The risk of data loss with conversion from UTF-8 to CP1252 is very small.

Before uploading, the file is to be zipped to reduce the file size and upload time.

### 3.2 Delivery frequency

Daily delivery, seven days a week.

GVB requires the data files to be retained at the SPOT system for seven (7) days. This to mitigate the risk of transmission errors or unavailability of the sFTP server.

Planned start time for transmission is preferred to be fixed. GVB requests InTraffic to propose a suitable time with regard to the expected machine load. This time has been set at 0:10 a.m. and 4:45 p.m.

### 3.3 Header

First header line to contain column name. Second header line to contain the datatype of each field. Please specify the maximum length for the types. Not necessary in the text file itself, but it must be clear how big a "string" or an "integer" can become.

#### 3.3.1 Functional description of fields

First row to contain the names of the columns, the second header row to list the datatypes.

#### 3.3.2 Technical field description

All character fields themselves.

Data types listed in the header originate from MySQL used for SPOT. Maximum values to prepare for should correspond to the MySQL specifications.

- ID column uses the BIGINT type, the "unsigned" version.
  - Does not allow negative values and starts at zero . Means it can become twice the size of the corresponding type in MS SQL Server. But even conservative estimates will never reach the max value.
- String can reach a maximum value of 65535 characters. However, the longest yet present is only 80 characters wide.
- Timestamps have a trailing ".0" (point zero) This most likely denoted 1/10 of a second. It is always zero and can be ignored.

### 3.4 Footer

Content is to list the number of data records available in the file. This to check completeness of the file.

#### 3.4.1 Functional description of fields

One column listing the number of data records EXCLUDING the header rows and the footer record itself.

#### 3.4.2 Technical field description

Integer

### 3.5 Field and line separator

Fields pipe "|" separated with NO field delimiter after the last column (so to avoid an "empty column" at the end of each row)

Line terminator Windows-style: carriage return & line feed (CRLF)

### 3.6 Field formatting

No quotes around separate fields

Decimal separator: comma (no separator for thousands)

Please replace NULL (empty/ non-existent) values with text value "null" (without quotes)

No leading nor trailing spaces

### 3.7 File name

<SYSTEM>\_<IDENTIFICATION>\_<DATE\_TIMESTAMP\_FILE\_CREATION>.txt (ZIP)

<SPOT>\_<functional area>\_<yyyymmddhh24mmss>.txt (ZIP)

Functional area to hold the KV identification (KV1, KV6, KV15 or KV17) all in upper case.

Before uploading to the sFTP, the file needs to be zipped to reduce file size.

### 3.8 File contents

There are several separate files to be covered with this interface.

#### 3.8.1 Description of the files contents

Data send from SPOT consists of "Bison" standard "KV" data. The specifications of those formats can be found on the Bison website: <http://bison.connekt.nl/standaarden/> Here, the various types are explained in a functional as well as technical sense.

The following files are to be send by SPOT

- KV1 Timetable
- KV6 Actual punctuality
- KV15 Free texts
- KV17 Updates on the operational process

In addition to the "Bison" fields, several extra fields are added by SPOT. See 3.8.3

### 3.8.2 Limits/ filters/ other specifics

KV1 (timetable) data is only transmitted by SPOT and not processed. That file is delivered to the FTP server as-is and hence does not conform to the technical file layout.

In the future SPOT will also receive metro information in the "SIRI" format. This format is not covered by this document.

### 3.8.3 Example of data rows

To be added once test process is completed.

Overview of fields (KV6)

| Field name                | Description                                                                       |
|---------------------------|-----------------------------------------------------------------------------------|
| id                        | ID in the SPOT database                                                           |
| timestamp                 | Timestamp of the message                                                          |
| spotTimestampReceived     | Timestamp of reception by SPOT                                                    |
| spotTimestampSent         | Timestamp SPOT send the message                                                   |
| msgproducer               | (Same as datasource → not used, will be removed)                                  |
| msgversion                | BISON version of the message                                                      |
| msgtimestamp              | (Same as timestamp → not used, will be removed)                                   |
| msgtype                   | Message type (delay, init, arrival, departure, on stop, on route, off route, end) |
| dataownercode             | Standard BISON fields                                                             |
| lineplanningnumber        |                                                                                   |
| operatingday              |                                                                                   |
| journeynumber             |                                                                                   |
| reinforcementnumber       |                                                                                   |
| userstopcode              |                                                                                   |
| passagesequencenumber     |                                                                                   |
| source                    |                                                                                   |
| vehiclenumber             |                                                                                   |
| punctuality               |                                                                                   |
| blockcode                 |                                                                                   |
| wheelchairaccessible      |                                                                                   |
| numberofcoaches           |                                                                                   |
| distancesincelastuserstop |                                                                                   |
| rdx                       |                                                                                   |
| rdy                       |                                                                                   |
| govireponse               | Response from recipients downstream. Will be renamed to "Result"                  |
| datasource                | Originating system of the message (EBS, VLMS)                                     |

KV15 and KV17 will be similar in contents.



## **3.9 Transmission**

File is to be send from SPOT to a sFTP server of GVB on a daily basis.

GVB requests the use of a "ready" file to signal successful transmission of the data file. Once the upload is complete, create a second file with exact same name and extension ".ready" in the same directory. This way the recipient knows when the data file is uploaded completely.

### **3.9.1 sFTP details**

Details of the sFTP server:

Server name: <ftp.gvb.nl>

SFTP protocol

Credentials supplied separately. (mail to Wiep Nijdam 5 November)

Please see chapter 4.4 for contact information.

## 4 Quality of the transmission

This chapter describes the criteria used to measure the quality of the data and the transmission of the file. The requirements are listed to provide insight into the checks carried out on the data. Also listed the reasons for rejection of a delivery.

### 4.1 Quality requirements

The general quality requirements:

- Accurate delivered data is identical to the source system
- Complete delivered data contains a complete set of relevant data
- Consistent data delivered conforms to referential integrity
- Unique identical data elements match in identifying fields
- Up to date delivered data represents the current situation
- Integratable data (elements) match other, similar datasets.
- Valid data conforms to the expected format and do not contain illogical values

### 4.2 Failed transfer

Data transfer is considered a failure when

- Data is corrupted upon receiving
- Data is incomplete
- Data is not available at the agreed location at the agreed time

When data transfer fails, the receiving party will notify the delivering party.

### 4.3 Responsibilities

#### 4.3.1 Responsibilities owner

GVB is owner of the data, except for the elements released under Creative Commons license.

The responsibilities as receiving party are listed in paragraph 4.3.3

As the owner of the data GVB has the following responsibilities:

- Determine access policy and allowable use of the data
- Determine requirements for data authorization
- Determine and maintain data definitions
- Supply information on the metadata, such as the definitions mentioned above
- Timely inform parties involved on changes to the points above

#### 4.3.2 Responsibilities sending party

The sending/ delivering party has the following responsibilities:

- Deliver up-to-date data;
- Deliver data according to the specification;
- To inform the receiving party as soon as possible in case of disturbance; so to avoid processing of faulty data requiring repair effort;

- To inform the receiving party when delivery at the planned time is not possible. And to come to an agreement when data can be delivered;
- Responsible for ensuring security, ending at the GVB sFTP server.
- To inform the receiving party in a timely fashion:
  - Should one or more data element become unavailable;
  - Planned changes in the data structure or use of the data;
  - Planned changes definition (meaning) of one or more data elements;This to allow for appropriate lead time to discuss, reach agreement and accommodate the changes.
- Responsible for delivering data giving a correct representation of the truth. Should any problem arise, the recipient shall be informed directly.

For priorities and response times please see section 3.1 of the DAP SPOT and sections 3.1.2 to 3.1.3 of the SLA SPOT.

#### **4.3.3 Responsibilities receiving party**

As the receiving party, GVB has the following responsibilities:

- Responsible for ensuring security from the sFTP server onwards
- Development of the interface mechanism according to this specification;
- Responsible for monitoring the data transmission;
- To inform the delivering party should the transfer fail;
- To check whether the data conforms to the specification;
- To inform the delivering party on failures on individual files or records;
- Processing of correct data in a timely fashion;
- Archiving received files according to specification of the data owner;
- Monitoring and ensuring security and access to the data according to specification of the data owner;

#### **4.4 Contact information parties involved**

GVB

Questions or remarks concerning this document:

Departmental mailbox: [Techniek-ICT-vernieuwing@gvb.nl](mailto:Techniek-ICT-vernieuwing@gvb.nl)

Questions or remarks concerning the FTP server or other technical issues:

Departmental mailbox: [Techniek-ICT-VVS@gvb.nl](mailto:Techniek-ICT-VVS@gvb.nl)

InTraffic

Departmental mailbox: [supportgvb@intraffic.nl](mailto:supportgvb@intraffic.nl)

Central telephone number: 06-82512293

#### **4.5 Validation rules**

An overview of the checks performed and the resulting action.

#### 4.5.1 File validation

| Validation Rule                                              | Action           |
|--------------------------------------------------------------|------------------|
| File name of the ZIP file does not conform to standard       | Reject data file |
| File name of the TXT file does not conform to standard       | Reject data file |
| Data rows do not match the specified number of columns       | Reject data file |
| Header rows do not conform to specification                  | Reject data file |
| Footer rows do not conform to specification                  | Reject data file |
| There is an incomplete set of files for the given time frame | Reject data file |
| Time frame overlaps with preceding delivery or shows a gap   | Reject data file |

#### 4.5.2 Header validation

| Field name     | Validation Rule            | Action           |
|----------------|----------------------------|------------------|
| Column headers | Do not match specification | Reject data file |
| Data types     | Do not match specification | Reject data file |

#### 4.5.3 Content validation

| Field name   | Validation Rule                  | Action           |
|--------------|----------------------------------|------------------|
| Primary Keys | Uniqueness of key fields         | Reject data file |
| Foreign Key  | Referential Integrity            | Reject data file |
| Various      | Mandatory fields                 | Reject data file |
| Various      | Conforming to data type and size | Reject data file |
| Various      | Values within (logical) range    | Reject data file |
| Various      | Date time values correct         | Reject data file |

#### 4.5.4 Footer validation

| Field name        | Validation Rule                                   | Action           |
|-------------------|---------------------------------------------------|------------------|
| Number of records | Formatting does not match specification           | Reject data file |
| Number of records | Do not number of data records present in the file | Reject data file |