

EPCIS - Automotive Business Vocabulary

VDA 5530 - Teil 1

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Process description

This Recommendation describes the extension of the ISO/IEC 19987 Core Business Vocabulary (CBV) standard by elements required by the automotive industry, which are compiled in the Automotive Business Vocabulary ABV. The CBV is the data standard used in connection with the ISO/IEC 19987 interface standard EPCIS 1.2.

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1 Introduction

Considering the continued digitisation of supply chains and Industry 4.0, process transparency and standardised communication along the supply chain have become critical issues.

To achieve this, machine-readable objects (auto IDs) and the seamless tracking of such objects along the process chain need to be defined and implemented. The path towards this goal has already been prepared with the adoption of VDA Recommendations 5500, 5501, 5509, 5510 and 5520. The next logical step is the implementation of standardised communication with all business partners across company boundaries. To prevent bespoke solutions with a limited scope, standardised communication must be based on international standards and the best-practice experience of the parties involved in the project.

The Automotive Business Vocabulary (ABV) builds on the EPCGlobal Core Business Vocabulary (CBV) described in ISO 19987. ABV and CBV are complementary. The ABV is an industry vocabulary that adheres to the specifications of the CBV. It includes only the vocabulary elements that are required specifically by car manufacturers and automotive suppliers, and that are not yet defined in the CBV. For all vocabulary elements specified in the CBV, the CBV format must be used. EPCIS messages that conform to the ABV are compatible with CBV in accordance to the ISO standard.

2 URI prefix

URN namespaces (preferred option) or URLs according to the schema below are used to identify the vocabulary elements specified in the ABV:

`urn:jaif:type:element`

`epcis.jaif-automotive.org/type/element`

Namespace ID of the automotive industry, indicating that the URL is an identifier for an ABV element.

`type`

Type of vocabulary element. In the case of additions to the vocabulary, e.g. "disposition", "bizSteps" and "bizTransactionTypes", the type is preceded by string "abv".

`element`

Vocabulary element.

Examples:

```
<epc> urn:jaif:id:obj:[object ID according to this Recommendation] </epc>
```

```
<disposition> urn:jaif:abv:disp:delayed </disposition>
```

2.1 Objects

For a detailed description of GS1-compliant object identification (e.g. for products, shipping units, assets and reusable packaging), refer to chapter 6 of the EPC Tag Data Standard (<http://www.gs1.org/epc/tag-data-standard>).

This Recommendation describes how objects with ISO-conforming identifiers need to be represented.

General precondition:

In order to ensure seamless traceability of an object over its entire lifecycle, it must be equipped with a globally unique instance identifier (object ID). An object must be traceable with the ID assigned to it at the start of its lifecycle. This ID must be used in all documents that are exchanged internally and between companies during the lifecycle of the object, serving as a unique reference. At the end of the object's lifecycle, the ID that was assigned to it must not be used again for another object for a period of time defined for the specific ID (e.g. VIN: 30 years).

Explanation:

In the context of this definition, an object is a physical object of any kind to which a unique ID has been assigned for the purpose of traceability. Documents that are used in traceable business processes are also objects.

The general principles for unique object identification based on the relevant ISO/IEC standards are described in detail in Recommendation VDA 5500. This chapter outlines the general requirements that must be met regarding the syntax of a unique object ID.

2.1.1 Typical object ID syntax

In most cases, the unique object ID consists of the components in table 1:

Table 1 Typical object ID syntax

DI	IAC	CIN	Object no.	Separator	PSN
Data Identifier	Issuing Agency Code	Company Identification Number	*Object Number	" + "	Part Serial Number

* The object number might be a material number or a container type code.

Exception: Object IDs that are assigned by a specific registration body, such as vehicle IDs or IDs of sea freight containers. In these object IDs, the data identifier is followed by the unique object number assigned by the respective registration body.

These and other important features of ISO/IEC-based object identification are explained below.

2.1.2 Data Identifier (DI)

The data identifier identifies the object type.

Table 2 lists the most common DIs used in the automotive sector. For more information, see the referenced chapters.

Table 2 Data identifiers (DIs) according to ANSI MH 10.8.2 (excerpt)

#	Description	DI	Chapter
1	Components (serialized)	37S	2.1.7.1
2	Components (non-serialized)	25P	2.1.7.2
3	Containers	26B – 29B	2.1.7.3
4	Tools, machine, other objects	26S	2.1.7.4
5	Vehicles	I	2.1.7.5
6	Transport vehicles (HGVs)	4I, 7J	2.1.7.5
7	Containers (see freight containers)	7B	2.1.7.6
8	Ships	17B / 18B	2.1.7.7
9	Air freight containers	1B	2.1.7.8
10	Aeroplanes	17B / 19B	2.1.7.9
11	Trains	17B / 19B	2.1.7.10

2.1.3 Issuing Agency Code (IAC)

The issuing agency code (IAC) indicates the agency who has issued the company identification number (CIN).

The issuing agency is an official body according to ISO/IEC 15459-2. Table 3 lists a number of common European and international issuing bodies for CINs in the automotive industry.

Table 3 Typical issuing bodies for CINs in the automotive industry

IAC	Designation	Length of CIN
OD	ODETTE International Limited	4 (an)
UN	Dun & Bradstreet	9 (n)

2.1.4 Company Identification Number (CIN)

As described in chapter 2.1.3, CINs are assigned and managed by an issuing body such as Dun & Bradstreet (D&B). In the case of D&B, the CIN is the well-known D-U-N-S number. In the context of parts and assembly tracking, the CIN refers primarily to the manufacturer of these parts and assemblies. In relation to containers, it refers to the owner of the container. D-U-N-S numbers are unique nine-digit numerical identifiers. Odette has chosen a system where CINs are denoted with four-digit alphanumeric strings. The company or organisational unit assigned a CIN ensures that all its parts and assemblies are uniquely identified across the globe.

2.1.5 Object number and serial number

The object ID consists of an object number (e.g. parts number, container type or tool number) combined with a serial number. This ID is preceded by the CIN and thus provides a globally unique identifier.

2.1.6 URI prefix for object identifies according to ISO/IEC

There are currently two established data structures in place for object identifiers, namely data structures according to ISO/IEC and data structures according to GS1. For the purpose of data exchange between different companies, it is recommended to follow the ISO/IEC standards, which are explained in more detail below. The implementation of the GS1 standards is described in the separate documents and not covered here.

There are two options for the implementation of a data structure that conforms to the ISO/IEC standard:

- Extension of object identifier in URL format
<http://epcis.jaif-automotive.org/id/obj/Identifier>
 or
<urn:jaif:id:obj:identifier>

The second option is the preferred one. The registration of the *jaif* namespace has been requested from the relevant registration body.

2.1.7 Detailed description of object ID

2.1.7.1 Serialized components

Table 4 Syntax of object ID for serialized components

#	UII data content (MB01)	Number of digits*	Sample value
1	Data identifier (DI)	3 characters (an)	37S
2	Issuing agency code (IAC)	2 characters (an)	UN
3	Company identification number (CIN)	Max. 9 characters (n)	321456789
4	Part number (PN)	PN + separator + PSN (max. 25 characters, an)	A111222333AB
5	Separator		+
6	Part serial number (PSN)		123456789012
	Number of characters	Max. 40 characters (an)	(240 bits)

Alphanumerical representation: 37SUN321456789A111222333AB+123456789012

#	Uniform resource identifier (URI)	Sample uniform resource name (URN)
1	urn:jaif:id:obj:[Pure Identity]	urn:jaif:id:obj:37SUN321456789A111222333AB+123456789012

2.1.7.2 Non-serialized components

Table 5 Syntax of object ID for non-serialized components

#	UII data content (MB01)	Number of characters*	Sample value
1	Data identifier (DI)	3 characters (an)	25P
2	Issuing agency code (IAC)	2 characters (an)	UN
3	Company identification number (CIN)	Max. 9 characters (n)	321456789
4	Part number (PN)	Max. 25 characters (an)	A111222333AB
	Number of characters	Max. 40 characters (an)	(240 bits)

Alphanumerical representation: 25PUN321456789A111222333AB

#	Uniform resource identifier (URI)	Sample uniform resource name (URN)
1	urn:jaif:id:obj:[Pure Identity]	urn:jaif:id:obj:25PUN321456789A111222333AB

2.1.7.3 Containers

Table 6 Object ID syntax for containers

#	UII data content (MB01)	Number of characters	Sample value
1	Data identifier (DI)	3 characters (an)	26B
2	Issuing agency code (IAC)	2 characters (an)	UN
3	Company identification number ((CIN)	Max. 9 characters (n)	321456789
4	Package type (PT)	PT + separator + PSN (max. 25 characters, an)	B12345
5	Separator		+
6	Part serial number (PSN)		123456789
	Number of characters	Max. 40 characters (an)	240 bits

Alphanumerical representation: 26BUN321456789B12345+123456789

#	Uniform resource identifier (URI)	Sample uniform resource name (URN)
1	urn:jaif:id:obj:[Pure Identity]	urn:jaif:id:obj: 26BUN321456789B12345+123456789

2.1.7.4 Other serialized objects

Other objects assigned a serial number can be identified according to ANSI 10.8.2 with DI "25S".
Examples: Machines and other equipment with unique serial/equipment number.

Table 7 Syntax of object ID for other serialized objects

#	UII data content (MB01)	Number of characters*	Sample value
1	Data identifier (DI)	3 characters (an)	25S
2	Issuing agency code (IAC)	2 characters (an)	UN
3	Company identification number (CIN)	9 characters (n)	321456789
4	Part serial number (PSN)	Max. 25 characters (an)	ABC123456789
	Number of characters	Max. 40 characters (an)	(240 bits)

Alphanumerical representation: 25SUN321456789ABC123456789

#	Uniform resource identifier (URI)	Sample uniform resource name (URN)
1	urn:jaif:id:obj:[Pure Identity]	urn:jaif:id:obj:25PUN321456789ABC123456789

2.1.7.5 Vehicles

Vehicles defined as the end products of the automotive industry are identified with VINs.

Table 8 Syntax of vehicle ID (VIN)

#	UII data content (MB01)	Number of characters*	Sample value
1	Data identifier (DI)	1 digit (an)	I
2	Vehicle identification number (VIN)	17 characters (an)	WAUZZZ98B12345678
	Number of characters	Max. 19 characters (an)	

Alphanumerical representation: IWAUZZZ98B12345678

#	Uniform resource identifier (URI)	Sample uniform resource name (URN)
1	urn:jaif:id:obj:[Pure Identity]	urn:jaif:id:obj:IWAUZZZ98B12345678

Vehicle registration

Use DI "7J" and vehicle registration. Vehicle registrations are however not globally unique and should therefore be used together with the country code.

Alternatively the DI 4i with VIN and license plate can be used. This is especially useful for transport vehicles and is globally unique again.

Table 13 Syntax of ship identification with ship name

#	UII data content	Number of characters*	Sample value
1	Data identifier (DI)	2 characters (an)	7J
2	HGV vehicle registration preceded by country code according to UN/LOCODE	35 characters (an)	DE_HBGL1234

Alphanumerical representation: 7JDE_HBGL1234

#	Uniform resource identifier (URI)	Sample uniform resource name (URN)
1	urn:jaif:id:obj:[Pure Identity]	urn:jaif:id:obj:7JDE_HBGL1234

2.1.7.6 Sea freight containers

Sea freight containers are uniquely identified according to ISO 6346. The codes are assigned and managed by the Bureau International des Containers et du Transport Intermodal (B.I.C.).

Source: <https://www.bic-code.org/>

Table 9 Syntax of container ID

#	UII data content	Number of characters*	Sample value
1	Data identifier (DI)	2 characters (an)	7B
2	BIC code of container	12 characters (an)	MSCU1234567

Alphanumerical representation: 7BMSCU1234567

#	Uniform resource identifier (URI)	Sample uniform resource name (URN)
1	urn:jaif:id:obj:[Pure Identity]	urn:jaif:id:obj:7BMSCU1234567

2.1.7.7 Ships

Each ship is uniquely identified by its IMO number.

Source: <http://www.imo.org/en/OurWork/MSAS/Pages/IMO-identification-number-scheme.aspx>

Alternatively, the ship's name can be used for identification purposes.

Table 10 Syntax of ship identification with IMO code

#	UII data content	Number of characters*	Sample value
1	Data identifier (DI)	3 characters (an)	18B
2	"IMO"	3 characters (an)	IMO
3	IMO number	7 digits (n)	7654321

Alphanumerical representation: 18BIMO7654321

#	Uniform resource identifier (URI)	Sample uniform resource name (URN)
1	urn:jaif:id:obj:[Pure Identity]	urn:jaif:id:obj:18BIMO7654321

Table 11 Syntax of ship identification with ship name

#	UII data content	Number of characters*	Sample value
1	Data identifier (DI)	3 characters (an)	17B
2	Ship name	35 characters (an)	MSC_IOWA

Alphanumerical representation: 17BMSC_IOWA

#	Uniform resource identifier (URI)	Sample uniform resource name (URN)
1	urn:jaif:id:obj:[Pure Identity]	urn:jaif:id:obj:17BMSC_IOWA

2.1.7.8 Air freight containers

For air freight, a system based on Unit Load Devices (ULD) is in use. Unit load devices are pallets and containers for air freight. Each ULD is uniquely identified by a ULD number.

Syntax:

```
<prefix><serial_number><owner>
<prefix>:          3 characters (an)      type of ULD
<serial_number>:  4 digits (n)         serial number
<owner>:          3 characters (an)     Airline code
```

The prefix and airline codes are managed by IATA.

Source: https://de.wikipedia.org/wiki/Unit_Load_Device

Table 12 Syntax of ULD identification

#	Ull data content	Number of characters*	Sample value
1	Data identifier (DI)	2 characters (an)	1B
2	ULD identification	10 characters (an)	AAK2418LH

Alphanumerical representation: 1BAAK2418LH

#	Uniform resource identifier (URI)	Sample uniform resource name (URN)
1	urn:jaif:id:obj:[Pure Identity]	urn:jaif:id:obj:1BAAK2418LH

2.1.7.9 Aircrafts

Each aircraft has its own "registration code", similar to the registration plate of cars. These codes are however rarely changed or reassigned, unless the aircraft is sold to an owner in another country.

The registration codes are assigned by the International Civil Aviation Organization (ICAO). For civil aircraft, the code consists of a country code and a national registration code, whereby the syntax of the country code differs from state to state.

Source: <https://de.wikipedia.org/wiki/Luftfahrzeugkennzeichen>

There is currently no DI for aircraft identification in place. DI "17B" can be used (same code as for ships).

Table 13 Syntax of aircraft identification with aircraft name

#	Ull data content	Number of characters*	Sample value
1	Data identifier (DI)	3 characters (an)	17B
2	Aircraft name	35 characters (an)	

Alphanumerical representation: 17BDA_ZYXW

#	Uniform resource identifier (URI)	Sample uniform resource name (URN)
1	urn:jaif:id:obj:[Pure Identity]	urn:jaif:id:obj:17B DA_ZYXW

For the identification of air transports, the flight number is normally sufficient. Each flight number represents a flight connection and consists of the respective IATA code of the airline and a number with 4 or 5 characters. Unless there is a date, the flight number is not a unique identifier. For flights, DI "19B" should be used.

Table 14 Syntax of aircraft identification with flight number

#	Ull data content	Number of characters*	Sample value
1	Data identifier (DI)	3 characters (an)	19B
2	Aircraft name	35 characters (an)	LH_456

Alphanumerical representation: 19BLH_456

#	Uniform resource identifier (URI)	Sample uniform resource name (URN)
1	urn:jaif:id:obj:[Pure Identity]	urn:jaif:id:obj:19BLH_456

As there is no unique DI for aircrafts or flights, event attribute <jaif:transport-mode> (see VDA 5530 Part 2) should be used to obtain a unique ID for this type of transport.

2.1.7.10 Trains

Traction units

Since 2007, all newly registered locomotives and traction units in Germany are assigned a 12-digit number from the EU rail vehicle register. The code conforms roughly to the UIC Code of Practice 438-3 - Identification marking for tractive stock.

A complete registration number consists of 12 digits.

- The first two digits indicate the type of the traction unit.
- The third and the fourth digit indicate the country of origin.
- Digits 5 to 11 form the national block that can be freely assigned as required in each country.
- The twelfth digit is a check digit.
- It is followed by a country code and the code of the vehicle owner.

Source: https://de.wikipedia.org/wiki/UIC-Kennzeichnung_der_Triebfahrzeuge

There is no specific DI for traction units. DI "17B" can be used (same code as for ships).

Rail waggons

The UIC waggon numbers are assigned and managed by the International Union of Railways (Union internationale des chemins de fer, UIC). The UIC number (formerly waggon number) uniquely identifies freight and passenger waggons and includes important key data for rail traffic.

A complete waggon number consists of 12 digits as follows:

- First and second digit: Code for interoperability capacity (for traction units: type code)
- Third and fourth digit: UIC country code
- Fifth to eighth digit: Vehicle type code
- Ninth to eleventh digit: Serial number of freight waggon
- Twelfth digit: Check digit

Source: <https://de.wikipedia.org/wiki/UIC-Waggennummer>

There is no specific DI for rail waggons. DI "17B" can be used (same code as for ships).

Train connections can in many cases be identified based on the train number, similar to the flight number. As with flights, the train number is not a unique identifier, unless it is accompanied by a date. For train connections, use DI "19B" (same as for flights). As there is no unique DI for trains or train connections, event attribute <jaif:transport-mode> (see VDA 5530 Part 2) should be used to obtain a unique ID for this type of transport.

3 Automotive business vocabulary

The ABV specifies additional vocabulary components that can be used in the various elements of an EPCIS event. The components extend the CBV by elements that are required for processes in the automotive industry.

Note: Elements that are not used in the CBV or the ABV ("user elements") do not conform to the ABV. The subchapters below describe the ABV extensions for the individual EPCIS event fields. The syntax of the standard vocabulary elements are described in the CBV standard.

3.1 Business steps

Identifiers for elements of the ABV business step vocabulary have the following syntax:

<http://www.jaif-automotive.org/bizstep/element/bizstep>

or

<urn:jaif:abv:bizStep:element>

The following *elements* are defined:

<i>element</i>	Description	Examples
consuming	An object is consumed/incorporated in the course of the process.	Adhesives, welding material; non-reversible machining/integration
passing	An object passes a scanning device.	A forklift truck with a pallet passes through a gate. Object identifier that has no direct relevance for business, e.g. object for improved monitoring.
producing	An object (product) is machined.	Grinding, polishing, painting, drilling, forming, preparing.
providing	An object is provided/made available.	A load carrier is provided for filling with KLTs. The production of a part is completed and the object can be collected/transported to the next station.
reassigning	An object or part number is reassigned.	Packed objects are reassigned (e.g. parts number of customer A assigned to customer B after call-off).
retrieving	An object is taken from the storage area.	A pallet begins its journey on a forklift truck.
parking	An object is parked.	A self-propelled / completed vehicle is parked.

Example:

<bizStep>[urn:jaif:abv:bizstep:providing](#)</bizStep>

3.2 Disposition

Identifiers for elements of the ABV disposition vocabulary have the following syntax:

urn:jaif:abv:disp:element

The following *elements* are defined:

<i>element</i>	Description	Examples
empty	An object is empty after the event.	
dirty	An object is dirty and needs to be cleaned.	
full	An object is full after the event.	
not_empty	An object is not (yet) empty (in an unpacking process), or the target filling level is not (yet) reached (in a packing process).	A container is being emptied (parts removal) or being filled. The meaning becomes clear in conjunction with the respective bizstep, e.g. unpacking / packing.
ok	An object has been checked and meets the requirements.	
parked	An object has been parked.	A self-propelled / completed vehicle is parked in an outdoor space.

Example:

<disposition>[urn:jaif:abv:disp:parked](#)</disposition>

3.3 Business Transaction Type (BTT)

The ABV specifies the following additional elements for the BusinessTransactionTypeID vocabulary according to the EPCIS specification [EPCIS 7.2.6.1]. An EPCIS event only conforms to the ABV, if CBV elements or elements from the table below are used for the document type.

The respective identifiers have the following syntax:

urn:jaif:abv:btt:*element* whereby *element* is a vocabulary element from the list below:

<i>element</i>	Description
bn	Booking number
dn	Delivery note (see also VDA 4987)
dnpos	Delivery note item (see also VDA 4987)
kbnid	Kanban ID
mrn	Movement Reference Number (customs registration number)
to	Transport order
topos	Transport order item
shpid	Shipping number (see VDA4939 and VDA4987 (predecessor document: VDA4913))

Example:

<bizTransaction type="urn:jaif:abv:btt:to">

3.4 Business Transaction Identifier (BTI)

Business transaction identifiers, whose type is defined in the ABV are used as follows:

[urn:jaif:abv:bt:<companyprefix>.<system_id>.<bti>](#)

[/bti](#)

Qualifier Business Transaction Identifier

Example:

`<bizTransaction type="urn:jaif:abv:btt:dn">`

`urn:jaif:abv:bt:4010007.P87.0080016384`

`</bizTransaction>`

3.5 Locations

3.5.1 URI prefix for location identifiers according to ISO/IEC

There are currently two established data structures in place for location identifiers (similar to the system for object identifiers), namely data structures according to ISO/IEC and data structures according to GS1. For the purpose of data exchange between different companies, it is recommended to follow the ISO/IEC standard, which is explained in more detail below. The implementation of the GS1 standard is described in separate GS1 documents and not covered here.

There are two options for the implementation of a data structure that conforms to the ISO/IEC standard:

- Extension of object identifier in URL format URL
<http://epcis.jaif-automotive.org/id/loc/Identifier>
or
<urn:jaif:id:loc:identifier>

The second option is the preferred one. The registration of the *jaif* namespace has been requested from the relevant registration body.

For the identification of the location in the `<bizLocation>` and `<readPoint>` elements of the EPCIS event, the URI format defined in the CBV must be used as a rule. In addition, "business locations" in the ABV-conforming EPCIS events can be identified using the UN/LOCODE or IATA code (for airports). Also permissible are geographic coordinates.

3.5.2 Location within the company

Locations are classified as follows:

`ReadPoint` is the read point at which the object has been detected and recorded. The `bizLocation` is the place at which the object is located directly after having been recorded.

Example: The object is registered at ramp 1 of gate 1 and is located in the buffer zone of the incoming inspection area. In this case, the gate or actual scanning point can be used as the `readPoint` (without or only indirect reference to the actual location). The `bizLocation` should however always be a clearly identified physical location within the company premises.

For certain processes, such as shipping events, the bizLocation might not need to be defined, as there is no specific reference to a location after the process step has been completed and the object is placed on a transport vehicle.

Table 9 Example of readPoint (RFID scanning)

#	Data content	Number of digits	Value
1	Data identifier (DI)	3 digits (an)	25S
2	Issuing agency code (IAC)	2 digits (an)	UN
3	DUNS number (CIN)	9 digits (n)	321456789
4	Plant	2 digits (an)	21
5	Cost centre	5 digits (n)	12340
6	Device name / serial no.	X digits (an)	22334455

Alphanumerical representation: 25SUN321456789211234022334455

During transmission, the device ID is denoted following the URN syntax.

urn:jair:id:obj:25SUN321456789211234022334455

Table 10 Sample data structure of business location

#	Data content	Number of digits	Value
1	Data identifier (DI)	3 digits (an)	25L
2	Issuing agency code (IAC)	2 digits (an)	UN
3	DUNS number (CIN)	9 digits (n)	321456789
4	Plant	n digits (an)	IN
5	Building	n digits (an)	T32
6	Floor*, room	n digits (an)	204

Alphanumerical representation: 25LUN321456789INT32204

urn:jair:id:obj:25LUN321456789INT32204

3.5.3 UNLOCODE / IATA code

Location code based on UN/LOCODE (United Nations Code for Trade and Transport Locations) or IATA code for airports.

<http://www.unece.org/cefact/locode/service/location>

<http://www.iata.org>

Table 10 Sample data structure of UN/LOCODE

#	Data content	Number of digits	Value
1	Data identifier (DI)	3 digits (an)	26L
2	UN/LOCODE	5 digits (an)	DEBRV

Table 10 Sample data structure of IATA CODE

#	Data content	Number of digits	Value
1	Data identifier (DI)	3 digits (an)	26L
2	IATA CODE	3 digits (an)	STR

Note:

- For such locations, only a limited amount of master data (from UN/LOCODE list) is required.
- There is no LocationReference for businessLocation according to UN/LOCODE

Example:

```
<bizLocation>
  <id>urn:jaif:id:loc:DESTR</id>
</bizLocation>
```

3.5.4 Geo coordinates

When using GPS or other satellite data to locate transport vehicles, it might be useful to resort to geographic coordinates for readPoint or bizLocation.

The following general format described in RFC 5870 can be used, as it does not require a DI.

```
geo:+22.300,-118.44
```

```
<bizLocation>geo:+22.300,-118.44</bizLocation>
```

4 Event extensions for EPCIS events

4.1 XML namespace

XML namespaces are used to uniquely identify the vocabulary of a XML document. According to the prefix mechanism, the elements are linked to a namespace.

```
xmlns:jaif=" http://www.jaif-automotive.org/epcis/xsd"
```

4.2 Administrative extension types

4.2.1 Original local infobroker repository

For the unique allocation of the repository that initially recorded an event, the RepositoryID is included in an additional element:

```
<jaif:eventOrigin> RepositoryID </jaif:eventOrigin>
```

RepositoryID

URL of repository as assigned by the repository owner. This ID has the syntax of a qualifying domain (see example). The assignment of the logical ID to an actual communication channel must be arranged between the partners.

Example:

```
<jaif:eventOrigin>infobroker1.de.companyname.com</jaif:eventOrigin>
```