

DIN EN ISO 14823



ICS 35.240.60; 43.040.15

Entwurf

Einsprüche bis 2016-01-27
Vorgesehen als Ersatz für
DIN CEN ISO/TS 14823
(DIN SPEC 70652):2011-08

**Intelligente Verkehrssysteme –
Graphisches Verzeichnis (ISO/DIS 14823:2015);
Englische Fassung prEN ISO 14823:2015**

Intelligent transport systems –
Graphic data dictionary (ISO/DIS 14823:2015);
English version prEN ISO 14823:2015

Anwendungswarnvermerk

Dieser Norm-Entwurf mit Erscheinungsdatum 2015-11-27 wird der Öffentlichkeit zur Prüfung und Stellungnahme vorgelegt.

Weil die beabsichtigte Norm von der vorliegenden Fassung abweichen kann, ist die Anwendung dieses Entwurfes besonders zu vereinbaren.

Stellungnahmen werden erbeten

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Gesamtumfang 90 Seiten

DIN-Normenausschuss Automobiltechnik (NAAutomobil)
DKE Deutsche Kommission Elektrotechnik Elektronik Informationstechnik in DIN und VDE

Nationales Vorwort

Dieses Dokument (prEN 14823:2015) wurde vom Technischen Komitee CEN/TC 278 „Intelligente Verkehrssysteme“ ausgearbeitet, dessen Sekretariat vom NEN (Niederlande) gehalten wird in Verbindung mit dem technischen Komitee ISO/ TC204 „Intelligent Transport Systems“.

Das zuständige deutsche Normungsgremium ist der Gemeinschaftsarbeitsausschuss NA 052-02-71 GA „Intelligente Verkehrssysteme“ des Normenausschusses Automobiltechnik.

Das Präsidium des DIN hat mit seinem Beschluss 1/2004 festgelegt, dass von dem in den Regeln der europäischen Normungsarbeit von CEN/CENELEC verankerten Grundsatz, wonach Europäische Normen in den drei offiziellen Sprachen Deutsch, Englisch und Französisch veröffentlicht werden, in begründeten Ausnahmefällen abgewichen und auf die deutsche Sprachfassung verzichtet werden kann.

Dieser Normenentwurf definiert ein grafisches Datenverzeichnis. Dies wurde mit der Absicht entwickelt, um eine gemeinsame Basis zur Übertragung grafischer Informationen die, unabhängig von Sprache oder regionalen Unterschieden, von Anwendern wie Verkehrskontrollzentren, Verkehrsinformationszentren oder Dienste Anbietern, entschlüsselt und somit verstanden werden können. Die Anpassung einheitlicher Grafikdaten verbessert für den Anwender das Verständnis für grafische Informationen und somit die Anwenderfreundlichkeit von TTI-Systemen.

Änderungen

Gegenüber DIN CEN ISO/TS 14823 (DIN SPEC 70652):2011-08 wurden folgende Änderungen vorgenommen:

- a) Überführung in eine europäische Norm,
- b) Restrukturierung des gesamten Dokumentes,
- c) Ergänzung der Anhänge E und F.

Nationaler Anhang NA (informativ)

Begriffe

Die folgenden Begriffe sind für GDD notwendig und werden in Abschnitt 7.2 festgelegt

3.1

Informationselement

IE

3.2

Piktogramm Kodierung

3.3

Datenelement

3.4

Kommunikationsdaten

3.5

Ländercode

3.6

Service Kategoriekodierung

3.7

Piktogramm Kategoriekodierung

3.8

Attribut

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Foreword

ISO (the International Organization for Standardisation) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardisation.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;
- an ISO International Standard (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/IS 14823 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*, and by Technical Committee CEN/TC 278, *Intelligent transport systems* in collaboration.

Introduction

This International Standard presents a Graphic Data Dictionary (GDD) that has been developed with the intent of creating a common basis for transmitting encoded information for existing road traffic signs and pictograms. The coding system has been developed to be language independent, such that data that can be interpreted, irrespective of language or regional differences. This is intended to support Intelligent Transport System messaging.

The purpose of GDD is to specify an encoding system that specifies unique identifiers for road traffic signs and pictograms used in several countries and to associate these into common functional groups.

Elements of Graphic Data are the:

- full name of the pictogram;
- definition of the pictogram;
- code for the pictogram;
- attribute(s) of the pictogram; and,
- pictogram itself.

Normative items in this International Standard are the coding scheme involving the full name, definition and attributes to define each graphic image. This standard is not intended to create and specify a common design of graphic images.

The intended usage of this International Standard is to support:

- the efficient IT-centric encoding for ITS messaging to represent specific road traffic signs and pictograms; and,
- the consistent decoding of encoded road traffic signs and pictogram data for display in ITS.

This International Standard may support the translation of signs and pictograms with a similar purpose from the representation used in one country to the representation used in another country.

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Intelligent transport systems — Graphic data dictionary

1 Scope

This International Standard defines a system of standardised codes for existing road traffic signs and pictograms used to deliver traffic and traveller information (TTI). The coding system can be used in the formation of messages within Intelligent Transport Systems.

2 Normative references

The following referenced document is indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- ISO 3166-1
- ISO/IEC 8824-1

3 Terms and definitions

The following terms are essential for GDD and are defined in Section 7.2

3.1 Information element (IE)

3.2 Pictogram code

3.3 Data element

3.4 Communication data

3.5 Country code

3.6 Service category code

3.7 Pictogram category code

3.8 Attribute

4 Abbreviated Terms

The following abbreviations of terms shall be used in this International Standard

DE	Data Element
GDD	Graphic Data Dictionary
IE	Information Element
DTM	Date/Time/Period
EDT	Exemption status of Date/Time/Period
SET	Section
NOL	Number of Lanes

DFL	Directional Flow of Lane
VED	Vehicle Dimensions
SPE	Speed
ROI	Rate of Incline
DBV	Distance between Vehicles
DDD	Destination/Direction/Distance
ASN.1	Abstracted notation one
UML	Unified Modelling Language

5 Document Structure

5.1 Normative clauses

Clause 6 provides requirements to be complied when generating communication data.

Clause 7 provides data structure of communication data and coding rules of communication data.

Clause 8 provides items Subject to Standardisation that are needed to facilitate communications with the users, which includes: full names; definitions; attributes; and pictograms which are listed as data to be provided to users.

5.2 Annexes

5.2.1 Annex A (Normative)

This annex provides pictogram attributes as data elements for traffic sign pictograms in the categories of: warning signs; regulatory signs; and guide signs.

5.2.2 Annex B (Normative)

This annex provides examples of data coding and the description of attributes for traffic sign pictograms based on ASN.1.

5.2.4 Annex C (Normative)

This annex provides a list of GDD attributes to show the direction at a diverging point.

5.2.5 Annex D (Informative)

This annex provides a UML diagram of GDD.

5.2.6 Annex E (Informative)

This annex provides a pictogram catalogue for U.N. and a selection of countries.

5.2.7 Annex F (Informative)

The coding scheme that applies to complex configurations of roadway intersections is presented in this annex as part of the coding system for traffic sign pictograms.

6 Requirements

The intended usage of this International Standard is to support: the efficient IT-centric encoding for ITS messaging to represent specific road traffic signs and pictograms; and the consistent decoding of encoded road traffic signs and pictogram data for display in ITS.

This International Standard supports the translation of signs and pictograms with similar purpose from the representation used in one country to the representation used in another country. For illustrative purposes, it is foreseen that this International Standard can be used to encode information concerning a specific road traffic sign or pictogram that is then embedded into other information to be exchanged; if needed, on receipt of this information, the receiver can use the contents of this International Standard to decode the information concerning the specific road traffic sign or pictogram to support display across a range of dissemination systems. Examples of these dissemination systems may include: control centre system user interfaces; Variable Message Signs; Public Access Terminals; mobile personal information systems; and, on-board units.

- Communication data shall consist of pictogram codes and may also contain attributes.
- The pictogram shall be coded based on coding rules defined in section 7.1.
- Attribute DTM(Date/Time/Period) shall be coded based on table 9
- Attribute EDT(Exemption status of date/Time/Period) shall be coded based on table 10
- Attribute SET(Section) shall be coded based on table 11
- Attribute NOL(Number of Lane) shall be coded based on table 12
- Attribute DFL(Directional Flow of Lanes) shall be coded based on table 13
- Attribute VED(Vehicle Dimensions) shall be coded based on table 14
- Attribute SPE(Speed) shall be coded based on table 15
- Attribute ROI(Rate of Incline) shall be coded based on table 16
- Attribute DBV(Distance Between Vehicles) shall be coded based on table 17
- Attribute DDD(Destination/Direction/Distance) shall be coded based on table 19
- Warning pictogram code shall be selected from table 20
- Regulatory pictogram code shall be selected from table 21
- Guide pictogram code shall be selected from table 22
- Public facilities Pictogram code shall be selected from table 23
- Ambient/road conditions pictogram code shall be selected from table 24

7 Graphic Data Dictionary

7.1 Information Elements

An approach is required to characterise the large set of existing road traffic signs and pictograms into functional groups – this is done by means of Information Elements (IE). Information Elements define functional categories of road traffic signs and pictograms performing broadly similar functions. For the Information Elements categorisation, see Table 1.

Table 1 — Information Elements

Type of Service (Division)	Subdivision	Nature
1) Traffic Sign Information	a) Danger warning	Danger warning sign information
	c) Regulatory	Priority sign information
		Prohibitory or restrictive sign information
		Mandatory sign information
	c) Informative	Advance direction
		Direction sign information
		Lane guide sign information
		Road/ place identification sign information
2) Public Facilities Information	a) Public facilities	Information giving notice of public facilities which may be useful to road users
3) Ambient/Road Condition Information	b) Ambient conditions	Information indicating ambient conditions which may be useful to the drivers of vehicles
	c) Road conditions	Sign information indicating road conditions which may be useful information for drivers of vehicles

The ‘Traffic Sign Information’ is subdivided into three categories, each of which defines information for each traffic sign established in each member country (see Section 7.5.1 ‘Country Code’). Each subcategory may be divided further based on its properties. The Public Facilities Information indicates the existence of certain public facilities and their service details (e.g., toilets, restaurants, first aid facilities, etc.). The “Ambient/ Road Condition Information” is concerned with the ambient condition of a roadway or local condition which may affect the flow of road traffic (such as bad weather and traffic congestion). IEs are all defined with their full names and are provided in the form of pictograms easily recognizable by the users. Pictograms to be used for information display may vary from country to country, political jurisdiction to political jurisdiction, or system operator to system operator.

7.2 Data Elements

IEs as communication data consists of a pictogram code and attributes. The Pictogram Code is a combination of the following four Data Elements (DEs): country code data, service category data pictogram category data, and attribute indicator code.

Country code data: DE 1 (the code number assigned to the country to which the system operator belongs);

Service category data: DE 2 (the code number assigned to the category of IE);

Pictogram category data: DE 3 (the code number assigned to the category of a pictogram type under the service category);

Attribute indicator code data: DE4 (the code number indicating whether any attributes are attached to the pictogram);

Attributes: When any attributes are needed for details, one or more of the eight attributes are added.

7.3 Data Structure

Each of the four DEs described in Section 7.3 has its own data field. By combining these data fields, the IEs described in Section 6.2 can be represented in various ways. Each data field is coded in units of DEs to create a certain IE. As a rule, every data field in every DE contains one octet (or byte) which allows representing an integer or a character. See Section 7.5 for details of the coding rule, and Section 7.6 for the attributes.

The coded data structure is as follows:

Table 2 — Coded data structure

	Data Element (DE) 1: Country Code (ISO/3166)		DE 2: Service Category Code		DE 3: Pictogram Category Code			DE 4: Attribute Indicator Code
Data Field	X8	X7	X6	X5	X4	X3	X2	X1

7.4.2 Data Element 2: Service Category Code (X6 X5)

Bit length = 16 bits

Value range = X6: 1-9

X5: 1-9

Table 5 — Service Category Code

Field	X6	X5
	Division Code	Class Code
Value & Description	1: Traffic Sign Pictogram	1: Danger Warning
		2: Regulatory
		3: Informative
	2: Public Facilities Pictogram	1: Public Facilities
	3: Ambient/Road Condition Pictogram	1: Ambient Condition
		2: Road Condition

7.4.3 Data Element 3: Pictogram Category Code (X4 X3 X2)

Bit length = 24 bits

Value range = X4: 1 to 9

X3: 1 to 9

X2: 1 to 9

Table 6 — Pictogram Category Code

Field	X4	X3	X2
	Pictogram Code		
Value & Description	Indicates items to be classified in X5 field by nature: 1 to 9 See Table 7 'Code Ordering' for details. Serial number (1 to 9)	Serial number (1 to 9)	Serial number (1 to 9)
Note: For pictograms corresponding to the coded items, see 'Annex B: Graphic Data Dictionary. Pictograms to be displayed will vary from country to country (depending on the national/regional regulations or the system operator of the country/region).			

7.4.4 Data Element 4: Attribute Indicator Code (X1)

Bit length = 8 bit

Value range = 1 or 2

Table 7 — Attribute Indicator Code

Field	X1
Value & Description	Indicates whether any attributes are attached. 1: Yes 2: No

7.5 Attributes

7.5.1 Attribute Segment

The attribute segment consists of the following data elements:

Table 8 — Data elements of attribute

Data Element(Full name)	Code	Section number
Date/Time/Period	DTM	7.5.2.1
Exemption status of Date/Time/Period	EDT	7.5.2.2
Section	SET	7.5.2.3
Number of Lanes	NOL	7.5.2.4
Directional Flow of Lane	DFL	7.5.2.5
Vehicle Dimensions	VED	7.5.2.6
Speed	SPE	7.5.2.7
Rate of Incline	ROI	7.5.2.8
Distance Between Vehicles	DBV	7.5.2.9
Destination/Direction/Distance	DDD	7.5.2.10

NOTE Each DE has its own qualifiers carrying coded values.

Attributes defined are used mainly for Traffic Sign Pictograms. For details, see 'Annex A: List of GDD Attributes':

7.5.2 Data Elements for attributes

7.5.2.1 DTM (Date/Time/Period)

Definition: Code DTM indicates the date/ time/ period status when the sign is valid and consists of the qualifiers of 'Year,' 'Month and Day,' 'Hour and Minute,' 'Day of the week,' and 'Time Limit.' 'Start' and 'End' properties exist for these qualifiers. For 'Special Month and Day,' only the assigned day is applicable to any regulation. (If needed, it may be followed by the 'Start' and 'End' properties.) These qualifiers must be used in DTM occurrences. Moreover, two or more values may be assigned to each qualifier.

Table 9 — Detail of DTM

Data Element Code & Full Name	Data Source					
	Qualifier	Full Name	Data Format (Default)	Coded Value	Unit Code	Default Units
DTM (Date / Time / Period)	SYR	Year (Start)	YYYY	Year: 0-9999	none	none
	EYR	Year (End)	YYYY	Year: 0-9999	none	non
	SMD	Month & Day (Start)	MMDD	Month: 1-12 Day: 1-31 LCL: Local time	none	none
	EMD	Month & Day (End)	MMDD	Month: 1-12 Day: 1-31 LCL: Local time	none	none
	PMD	Special Month & Day	MMDD	Month: 1-12 Day: 1-31 LCL: Local time NAH: National Holiday EVD: Even days ODD: Odd days	none	none
	SHM	Hour & Minute (Start)	HHMM	Hour: 1-23 Minute: 0-59 LCL: Local time	none	none
	EHM	Hour & Minute (End)	HHMM	Hour: 1-23 Minute: 0-59 LCL: Local time	none	none
	SDY	Day of the week (Start)	WWW	Assigned according to 'ISO 8601' 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday 7: Sunday	none	none
	EDY	Day of the week (End)	WWW	Assigned according to 'ISO 8601' 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday 7: Sunday	none	none
	LHM	Hour & Minute	NNN	Hour Minute	HOR: Hour MIN: Minute	Hour Minute

EXAMPLE

Parking or No Parking with Time Limit'

The left sign indicates that parking is allowed between 8:00 and 20:00 hours for a maximum 60 minutes, 'SHM = 8 hours' and 'EHM = 20 hours' to give the starting and ending times respectively, and 'LHM: 60 minutes gives a time duration. The right sign is that parking is not allowed in the time period indicated. These values are variable according to the change in ambient and/or road conditions. If a special event such as festival or parade is held, date attributes (SYR, SMD, EYR, EMD) are assigned temporally. 'Exclusive Lane Route Bus' and 'Assigned Lane for Trucks' are other examples of the application of DTM. Furthermore, there is a case of plural DTM assignments, such as



two time periods of 08:00 -10:00 and 16:00 – 20:00 for parking.

7.5.2.2 EDT (Exemption Status of Date/Time/Period)

Definition: Code EDT indicates the Day/ time/ period status to be exempted when the sign is invalid and contains qualifiers for 'Year,' 'Month and Day,' 'Hour and Minute,' 'Day of the week,' and 'Time Limit.' Also, 'Start' and 'End' properties exist for all these qualifiers. For 'Special Month and Day,' only the assigned day is applicable to any regulation. (If needed, it may be followed by the 'Start' and 'End' properties.) These qualifiers must be used in EDT occurrences. Moreover, two or more values may be assigned to each qualifier.

Table 10 —Detail of EDT

Data Element Code & Full Name	Data Source					
	Qualifier	Full Name	Data Format (Default)	Coded Value	Unit Code	Default Units
ETM (Exemption Status of Date/ Time / Period)	SYR	Year (Start)	YYYY	Year: 0-9999	none	none
	EYR	Year (End)	YYYY	Year: 0-9999	none	non
	SMD	Month & Day (Start)	MMDD	Month: 1-12 Day: 1-31 LCL: Local time	none	none
	EMD	Month & Day (End)	MMDD	Month: 1-12 Day: 1-31 LCL: Local time	none	none
	PMD	Special Month & Day	MMDD	Month: 1-12 Day: 1-31 LCL: Local time NAH: National Holiday EVD: Even days ODD: Odd days	none	none
	SHM	Hour & Minute (Start)	HHMM	Hour: 1-23 Minute: 0-59 LCL: Local time	none	none
	EHM	Hour & Minute (End)	HHMM	Hour: 1-23 Minute: 0-59 LCL: Local time	none	none
	SDY	Day of the week (Start)	WWW	Assigned according to 'ISO 8601' 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday 7: Sunday	none	none
	EDY	Day of the week (End)	WWW	Assigned according to 'ISO 8601' 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday 7: Sunday	none	none
	LHM	Hour & Minute	NNN	Hour Minute	HOR: Hour MIN: Minute	Hour Minute

EXAMPLE

'Parking with Time Limit and Day Exemption'

The sign indicates that parking is allowed for 60 minutes between 8:00 to 20:00 hours except for Sundays and holidays, using qualifiers 'SDY' and 'EDY'. Furthermore, there are other cases where two or more values can be assigned to each qualifier, such as 'Exempt on Sunday/Holiday and Saturday'.



7.5.2.3 SET (Section)

Definition: Code SET indicates a carriageway section within which the sign takes effect and contains qualifiers on 'Starting point & Length,' 'Applicable distance & Length,' and 'End point.' These qualifiers must be used in SET occurrences.

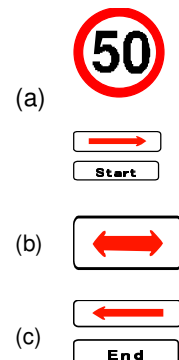
Table 11 — Detail of SET

Data Element Code & Full Name	Data Source					
	Qualifier	Full Name	Data Format (Default)	Coded Value	Unit Code	Default Units
SET (Section)	SPD	Starting point & Length	NNNN	Length: 1 to 9999 9999 used for only 'Start Point' but no length	KMT: km MTR: m MIL: mile FOT: foot	m
	CNL	Continuity & length	NNNN	Length: 1 to 9999 9999 used for only 'Continuity' but no length	KMT: km MTR: m MIL: mile FOT: foot	m
	EPT	End point				

EXAMPLE

'Mandatory Speed Limitation'

In this case, the pictogram indicates that 50km/hr speed limit (a) starts from this point as indicated by qualifier 'SPD', (b) is continuously valid as indicated by qualifier 'CNL', and (c) ends at this point as indicated by qualifier 'EPT'. These values are variable according to the change in ambient and/or road conditions. Signs for vehicle limitation, parking zone and beeping zone also need attributes of the code SET. There are other representations, for example: 'Start from here' or 'Start from xxx m ahead' for (a) 'SPD'; 'Continuously valid for xxx m' for (b) 'CNL'. If distance values are specifically added to the representation, they are also variable according to the change in ambient and/or road conditions.



7.5.2.4 NOL (Number of Lanes)

Definition: Code NOL indicates the number of lanes and lane numbers in numeric order (1 to NN) from the outer side to the inner side of the considered carriageway, the number 1 designating the outermost drivable lane in each direction. These qualifiers must be used in NOL occurrences.

Table 12 — Detail of NOL

Data Element Code & Full Name	Data Source					
	Qualifier	Full Name	Data Format (Default)	Coded Value	Unit Code	Default Units
NOL	NLN	Number of Lanes	NN	01 to NN	none	none

7.5.2.5 DFL (Directional Flow of Lane)

Definition: Code DFL consists of eight qualifiers, each of which has directional flow of lane. These qualifiers must be used in DFL occurrences.

Table 13 — Detail of DFL

Data Element Code & Full Name	Data Source				
	Full Name	Data Format (Default)	Coded Value	Unit Code	Default Units
DFL	Directional Flow of Lane	N	1  Straight direction Only SDL	none	none
			2  Straight and Left Turn Only SLT	none	none
			3  Straight and Right Turn Only SRT	none	none
			4  Left Turn Only LTO	none	none
			5  Right Turn Only RTO	none	none
			6  Convergence from the Left CLL	none	none
			7  Convergence from the Right	none	none

Data Element Code & Full Name	Data Source				
	Full Name	Data Format (Default)	Coded Value	Unit Code	Default Units
			CRI		
			8  Oncoming Vehicles Lane OVL	none	none

EXAMPLE

This sign indicates the traffic flow direction of each lane by using the coded values of DFL starting with the left lane. In this case, qualifiers SLT, SDL and RTO are indicated in this order.



Lane Number 1 2 3

7.5.2.6 VED (Vehicle Dimensions)

Definition: Code VED indicates the dimensional limitations or regulations of vehicles and consists of qualifiers of 'Vehicle-height,' 'Vehicle width,' 'Vehicle-weight,' and 'Vehicle-length.' These qualifiers must be used in VED occurrences-

Table 14 — Detail of VED

Data Element Code & Full Name	Data Source					
	Qualifier	Full Name	Data Format (Default)	Coded Value	Unit Code	Default Units
VED (Vehicle Dimensions)	HEI	Vehicle Height	NNN.N	Height: 1 to 999.9	MTR: m CMT: cm FOT: foot YRD: yard	m
	WID	Vehicle Width	NNN.N	Width: 1 to 999.9	MTR: m CMT: cm FOT: foot YRD: yard	m
	WEI	Vehicle Weight	NNN.N	Weight: 1 to 999.9	TNE: ton	T
	VLN	Vehicle length	NNN.N	Length 1 to 999.9	MTR: m CMT: cm FOT: foot YRD: yard	m
	VAW	Vehicle axle weight	NN.NN	Length 1 to 99.99	TNE: ton	T

EXAMPLE

(a)

.(a) Maximum Speed Limitation except for Mopeds (Vehicle class exemption). 'except for route buses,' 'except for light vehicles,' etc. may be specified by using VCE. In this case, vehicles subject to a maximum speed limitation of 50 km/h except for mopeds.

(b)



(b) Height Limit

Indicates that vehicles with a maximum height of 3.3m are permitted to pass through this point as specified by HEI. This value is variable according to the change in ambient and/or road conditions. (c)



(c) Width Limit

Indicates that vehicles with a maximum width of 2.2m are permitted to pass through this point as specified by WID. This value is variable according to the change in ambient and/or road conditions (d)



(d) Weight Limit

Indicates that vehicles with a maximum weight of 5 tons are permitted to pass through this point as specified by WEI. This value is variable according to the change in ambient and/or road conditions. (e)



7.5.2.7 SPE (Speed)

Definition: Code SPE indicates the limit values of vehicle speeds and consists of qualifiers of 'Maximum speed' and 'Minimum speed.' These qualifiers must be used in SPE occurrences. This element can be used in such applications as 'Advisory speed'.

Table 15 — Detail of SPE

Data Element Code & Full Name	Data Source					
	Qualifier	Full Name	Data Format (Default)	Coded Value	Unit Code	Default Units
SPE (Speed)	SPM	Max. speed	NNN	Speed: 1-250	KMH: km/hr	Km/hr
	MNS	Min. speed	NNN	Speed: 1-250	KMH: km/hr	Km/hr

EXAMPLE

(a) Mandatory Maximum Speed Limitation

Indicates that vehicles are permitted to pass through this point at a maximum speed of 50km/hr as specified by SPM. This value is variable according to the change in ambient and/or road conditions. This regulation may also be enforced in conjunction with the vehicle class limitation. (a)



b) Mandatory Minimum Speed Limitation

Indicates that vehicles using the road at the entrance to which this sign is placed shall travel at not less than the speed specified by MNS. This value is variable according to the change in ambient and/or road conditions. This regulation may also be enforced in conjunction with the vehicle class limitation. (b)



7.5.2.8 ROI (Rate of Incline)

Definition: Code ROI indicates the rate of incline of a roadway expressed in percentage and consists of qualifiers on 'Uphill' and 'Downhill.' These qualifiers must be used in ROI occurrences.

Table 16 — Detail of ROI

Data Element Code & Full Name	Data Source					
	Qualifier	Full Name	Data Format (Default)	Coded Value	Unit Code	Default Units
ROI (Rate of Incline)	UHL	Uphill	NN.N	Percentage: 1 to 99.9	PER: %	%
	DHL	Downhill	NN.N	Percentage: 1 to 99.9	PER: %	%

EXAMPLE

a) 'Slope' - 'Uphill'

Indicates that there is an uphill slope with an inclination of about 10% that starts from this point as specified by UHL. This sign is intended to draw the attention of operators of heavy motor vehicles and/or trucks with full loads so as to prevent any traffic obstruction.



(b) 'Slope' - 'Downhill'

Indicates that there is a downhill slope with an inclination of about 10% which starts from this point as specified by DHL. This sign is intended to draw the attention of operators of heavy motor vehicles and/or trucks with full loads so as to prevent any traffic obstruction or runaway crash.



7.5.2.9 DBV (Distance between Vehicles)

Definition: Code DBV indicates the minimum value of distance between vehicles (i.e., vehicular gap) and has a qualifier of 'Gap.' This qualifier must be used in DBV occurrences.

Table 17— Detail of DBV

Data Element Code & Full Name	Data Source					
	Qualifier	Full Name	Data Format (Default)	Coded Value	Unit Code	Default Units
DBV (Distance between vehicles)	GAP	Vehicular gap	NNN	Length: 1 to 999	MTR: m FOT: foot	m

EXAMPLE

Driving of Vehicles Less than XXm apart Prohibited'

Indicates that a distance as specified by GAP must be kept between the front end of one vehicle and the rear end of another preceding vehicle. In this example, vehicles must have a more than the given distance. This value is variable according to the change in ambient and/or road conditions.



7.5.2.10 DDD (Direction/Destination/Distance)

Definition: Code DDD indicates route information elements of direction, destination, distance, and other related items which can be used mainly for specifying informative signs. It contains qualifiers on 'Diverging Point Configuration,' 'Direction,' 'Destination,' 'Road Number,' 'Name,' and 'Distance.'

'Diverging Point Configuration' is classified into 'Junction Type,' 'Clockwise Roundabout Type,' and 'Counter clockwise Roundabout Type.' The value indicates the combination of octet directions.

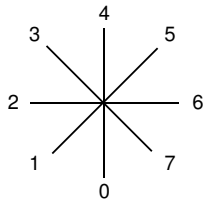
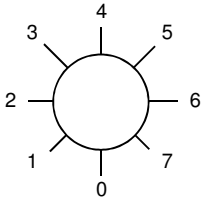
The value of 'Direction' indicates a number assigned to each of the octet directions, and the corresponding information on road class and the place where the road extends is given by qualifiers on 'Destination (Road)' and 'Destination (Place)'.

'Destination (Road)' is further specified by the coded value of 'Road/Street Number,' 'Road/Street Name,' or 'Exit Number on Motorway.' 'Place Name' is the sub-qualifier of 'Destination (Place)'.

There are two types of qualifiers of distance. 'Distance to Diverging Point' is a distance value from a point where the sign is posted to the indicated diverging point. 'Distance to Destination Place' is a distance value between the indicated diverging point or the current point and the destination given by 'Destination (Place).' 'Distance to Diverging Point' is primarily used for advance notification.

These qualifiers shall be used in DDD occurrences and two or more values may be assigned to each qualifier.

Table 18— Detail of DDD

Data Element	Data Source					
	Qualifier	Full Name	Data Format (Default)	Coded Value	Unit Code	Default Units
DDD (Destination/Direction/Distance)	DCJ	Diverging Point Configuration (Junction-type)	NNN	1-128 for a combination of octet directions (The direction exists where the bit is "ON."– 	none	none
	DCR	Diverging Point Configuration (Clockwise Roundabout Type)	NNN	1-128 for a combination of octet directions (The direction exists where the bit is "ON."– 	none	none
	TPL	Diverging Point Configuration (Counter-clockwise Roundabout Type)	NNN	1-128 for a combination of octet directions (The direction exists where the bit is "ON."–	none	none
	DRN	Direction	N	0-7 for the number assigned to each of octet directions. Code 0 indicates the lane above which the sign is installed (downward arrow).	none	none