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Standardisation of isonames for airbags

VDA AK27 working group „Airbagsimulation"

Reason for Standardisation

Background and Advantages

1. Background

- Currently, the specifications of ISO/TS 13499 leave some room for interpretation when choosing channel names for airbags.
- As a result, the channel names are different for OEMs and manufacturers.

2. Target and Advantage

- The VDA working group "Airbag Simulation" has developed a proposal for the standardization of channel names in order to reduce the additional work involved in converting channel names.
- These were extended to include iso names for simulation variables.

ISO TC 22/SC 12

Date: 2012-05-04

ISO/TS 13499 - RED B : 2012 E

ISO/TC 22/SC 12/WG 3

Secreteriat: AFNOR

Road vehicles - Multimedia data exchange format for impact tests

Véhicules routiers — Format d'échange de données multimédia pour les essais de choc

Related electronic document B

Channel Codes

— Version 1.6 —

Document type: Related electronic document
Document language: E

ISO MME Database 2.41 - Data Release 1.6

1. Reason for standardisation

2. Proposal after consultation in MME Task Force

3. Necessary additions to the ISO/TS 13499 – RED B

4. Addition figures for the ISO/TS 13499 – RED C

Proposal of the VDA working group "Airbagsimulation"

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Example for Frontairbag left

Code	Description	Remarks
11 AIRB ?? ?? AF ?? ? ?	Airbag	Frontairbag (left hand drive, right hand passenger)
11 AIRB 00 00 AF PR ? ?	Airbag	Frontairbag left pressure
11 AIRB 01 00 AF PR ? ?	Airbag	Frontairbag left pressure (2. measurement)
11 AIRB 02 00 AF PR ? ?	Airbag	Frontairbag left pressure (3. measurement)
11 AIRB 00 00 AF TI ? ?	Airbag	Frontairbag left ignition time
11 AIRB S1 00 AF CU ? ?	Airbag	Frontairbag left ignition current 1st stage (sensor)
11 AIRB S2 00 AF CU ? ?	Airbag	Frontairbag left ignition current 2nd stage (sensor)
11 AIRB A1 00 AF CU ? ?	Airbag	Frontairbag left ignition current 1st adaptive (sensor
11 AIRB A2 00 AF CU ? ?	Airbag	Frontairbag left ignition current 2nd adaptive (senso
11 AIRB S1 SQ AF CU ? ?	Airbag	Frontairbag left ignition current 1st stage (timer)
11 AIRB S2 SQ AF CU ? ?	Airbag	Frontairbag left ignition current 2nd stage (timer)
11 AIRB A1 SQ AF CU ? ?	Airbag	Frontairbag left ignition current 1st adaptive (timer)
11 AIRB A2 SQ AF CU ? ?	Airbag	Frontairbag left ignition current 2nd adaptive (timer
11 AIRB S1 00 AF VO ? ?	Airbag	Frontairbag left ignition voltage 1st stage (sensor)
11 AIRB S2 00 AF VO ? ?	Airbag	Frontairbag left ignition voltage 2nd stage (sensor)
11 AIRB A1 00 AF VO ? ?	Airbag	Frontairbag left ignition voltage 1st adaptive (sensor
11 AIRB A2 00 AF VO ? ?	Airbag	Frontairbag left ignition voltage 2nd adaptive (senso
11 AIRB S1 SQ AF VO ? ?	Airbag	Frontairbag left ignition voltage 1st stage (timer)
11 AIRB S2 SQ AF VO ? ?	Airbag	Frontairbag left ignition voltage 2nd stage (timer)
11 AIRB A1 SQ AF VO ? ?	Airbag	Frontairbag left ignition voltage 1st adaptive (timer)
11 AIRB A2 SQ AF VO ? ?	Airbag	Frontairbag left ignition voltage 2nd adaptive (timer
11 AIRB ?? ?? AF FO * ?	Airbag	Frontairbag left force (* = X, Y, Z, R)
11 AIRB ?? ?? AF AC * ?	Airbag	Frontairbag left acceleration (* = X, Y, Z, R)
11 AIRB ?? ?? AF VE * ?	Airbag	Frontairbag left velocity (* = X, Y, Z, R)
11 AIRB ?? ?? AF DS * ?	Airbag	Frontairbag left displacement (* = X, Y, Z, R)
11 AIRB 00 00 AF MF I ?	Airbag	Frontairbag left massflow in
11 AIRB 00 00 AF MF O ?	Airbag	Frontairbag left massflow out (sum of all leakage)
11 AIRB ?? ?? AF MF O ?	Airbag	Frontairbag left massflow out (single leakage)
11 AIRB 00 TO AF MF 0 ?	Airbag	Frontairbag left massflow in - sum massflow out
11 AIRB 00 TO AF MA 0 ?	Airbag	Frontairbag left total mass
11 AIRB 00 00 AF VU 0 ?	Airbag	Frontairbag left volume
11 AIRB 00 00 AF AR 0 ?	Airbag	Frontairbag left surface area
11 AIRB 00 00 AF TE 0 ?	Airbag	Frontairbag left temperature

New Fine location 1
Sx = for numbering stages
Ax = for numbering adaptivities

New
Direction
I = In
O = Out

New Dimension
MF = massflow
AR = surface
area

Total is a value of
Fine location 2

New Fine location 1
VE = vent
FB = fabric
SE = seam
MO = module
…

Use Fine location 2
For numbering of
e.g. vents

1. Reason for standardisation

2. Proposal of the VDA working group "Airbagsimulation"

3. Necessary additions to the ISO/TS 13499 – RED B

4. Addition figures for the ISO/TS 13499 – RED C

Necessary additions to the ISO/TS 13499 – RED B

Missing points

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To implement the standard, the following points are missing in ISO/TS 13499 — RED B :

- Dimension
  - MF for massflow
  - AR for surface area
- Direction
  - I for in (e.g. massflow in)
  - O for out (e.g. massflow out)
  - ~~T for total (e.g. total mass)~~ → use Fine Location 2
- Fine Location 1
  - VE for vent
  - FB for fabric
  - SE for seam
  - MO for module
  - S1, S2, S3, … for numbering stages of an airbag
  - A1, A2, A3, … for numbering adaptivities of an airbag

Fine Location 3
- AV for Airbag Vehicle

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Airbags for front protection (1)

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Frontal Airbags

```
? ? AIRB ???? AF   Drive and Passenger Airbag
? 1 KNBO ???? AF   Knee Airbag 1. seat row position 1
? 3 KNBO ???? AF   Knee Airbag 1. seat row position 3
? 4 KNBO ???? AF   Knee Airbag 2. seat row position 4
? 6 KNBO ???? AF   Knee Airbag 2. seat row position 6
? ? FOWE ???? AF   Footwell Airbag
```

? 3 AIRB   ? 6 AIRB   ? 9 AIRB

? 2 AIRB   ? 5 AIRB   ? 8 AIRB

? 1 AIRB   ? 4 AIRB   ? 7 AIRB

? ? AIRB

? ? KNBO   ? ? KNBO

? ? FOWE
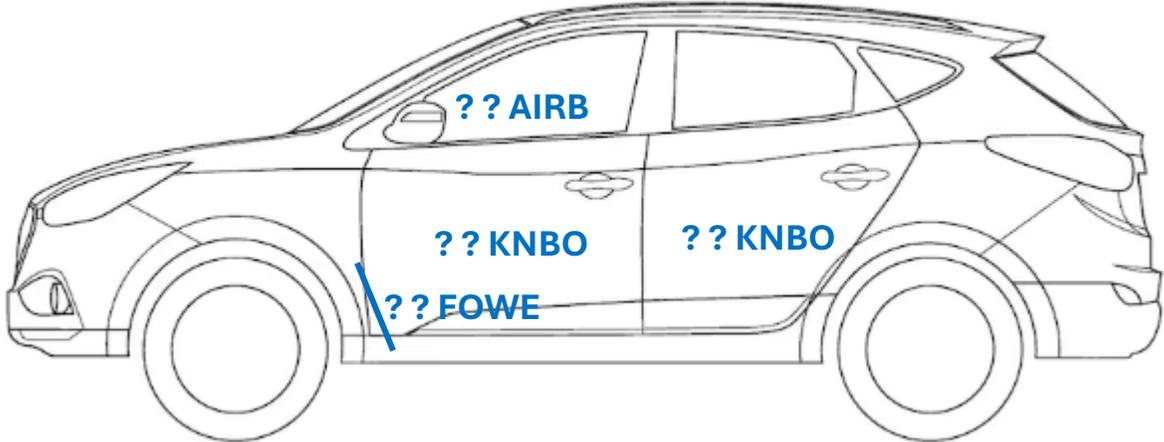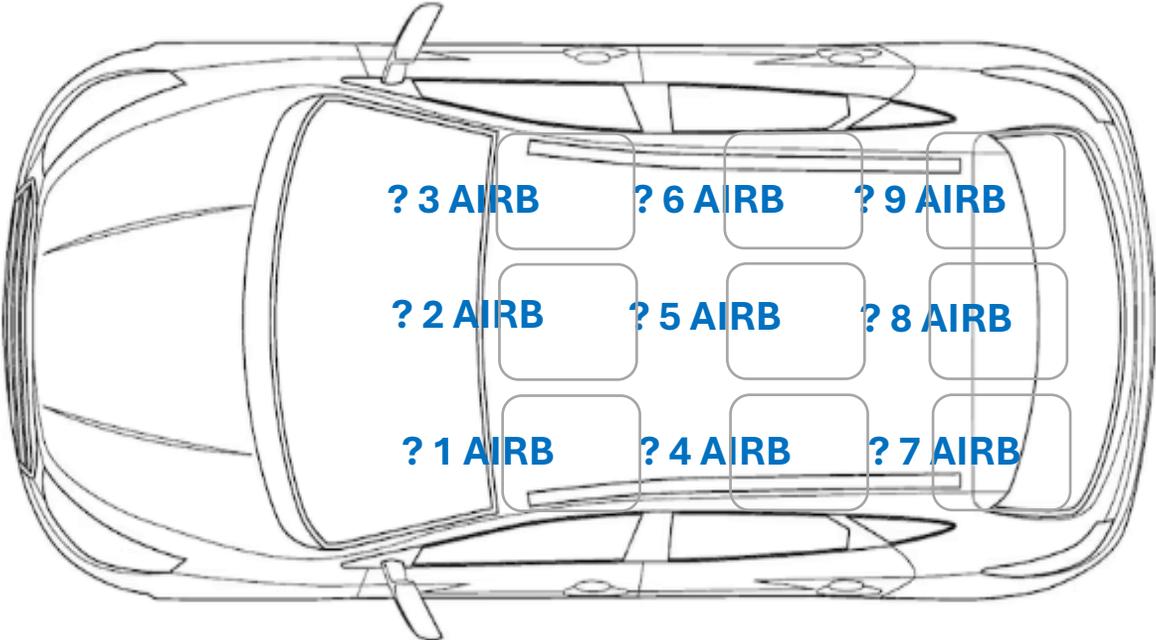
Airbags for front protection (2)

Front Airbags in seat

```
? ? SEBE ???? AF  Seat Belt Airbag
? ? SEPN ???? AF  Seat Ramp Airbag
```

Airbags for side protection (1)

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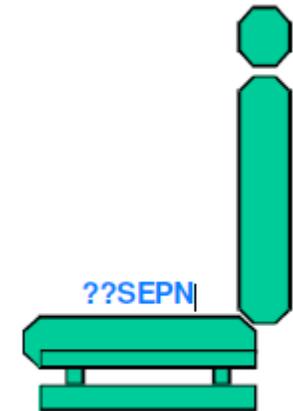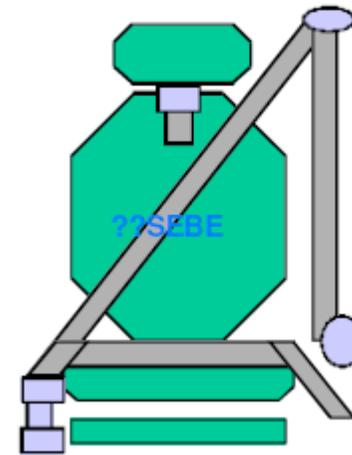
Side Airbags

```
? ? SEBA ???? AS   Side Airbag seat mounted
? ? SEPN ???? AS   Side Airbag seat pan mounted
? ? DOOR ???? AS   Side Airbag door mounted
```

? 3 DOOR   ? 6 DOOR

? 3 SEBA   ? 6 SEBA   ? 9 SEBA

? 1 SEBA   ? 4 SEBA   ? 7 SEBA

? 1 DOOR   ? 4 DOOR

? ? SEBA

??SEPN
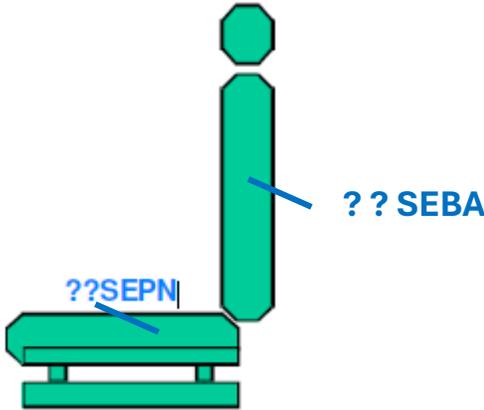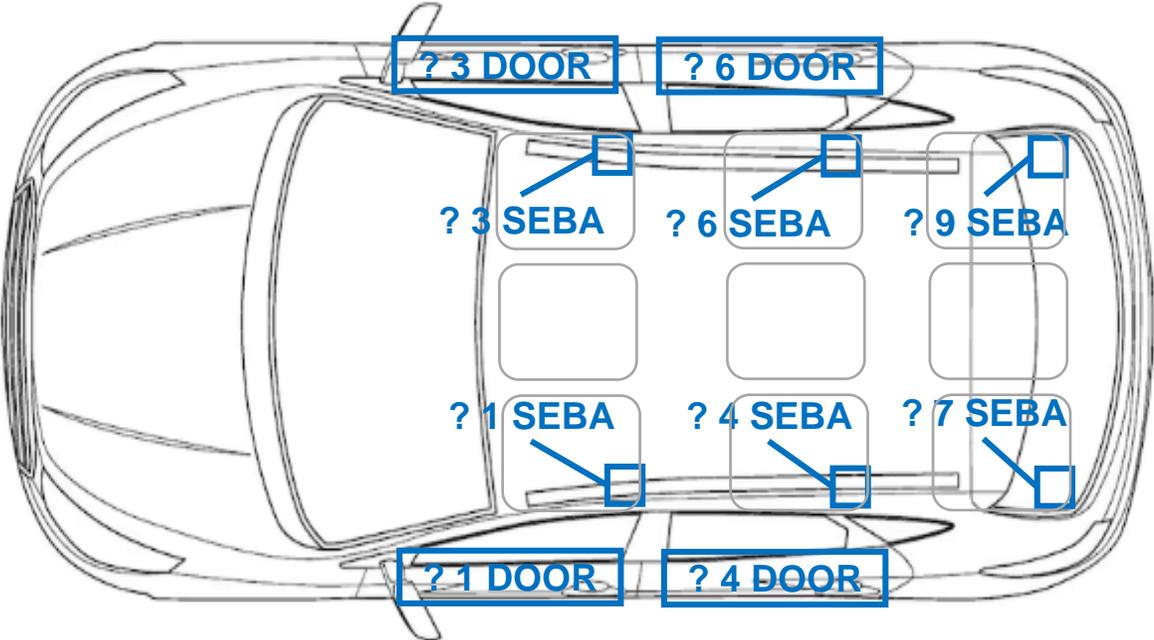
Airbags for side protection (2)

Interaction Airbags

? 1 SEBA ???? AI   Interaction/Farside/Center Airbag seat position 1 mounted

? 3 SEBA ???? AI   Interaction/Farside/Center Airbag seat position 3 mounted

? 4 SEBA ???? AI   Interaction/Farside/Center Airbag seat position 4 mounted

? 6 SEBA ???? AI   Interaction/Farside/Center Airbag seat position 6 mounted

? 2 ROOF ???? AI   Interaction Airbag roof mounted 1. seat row seat position 1 and 3

? 5 ROOF ???? AI   Interaction Airbag roof mounted 2. seat row seat position 4 and 6
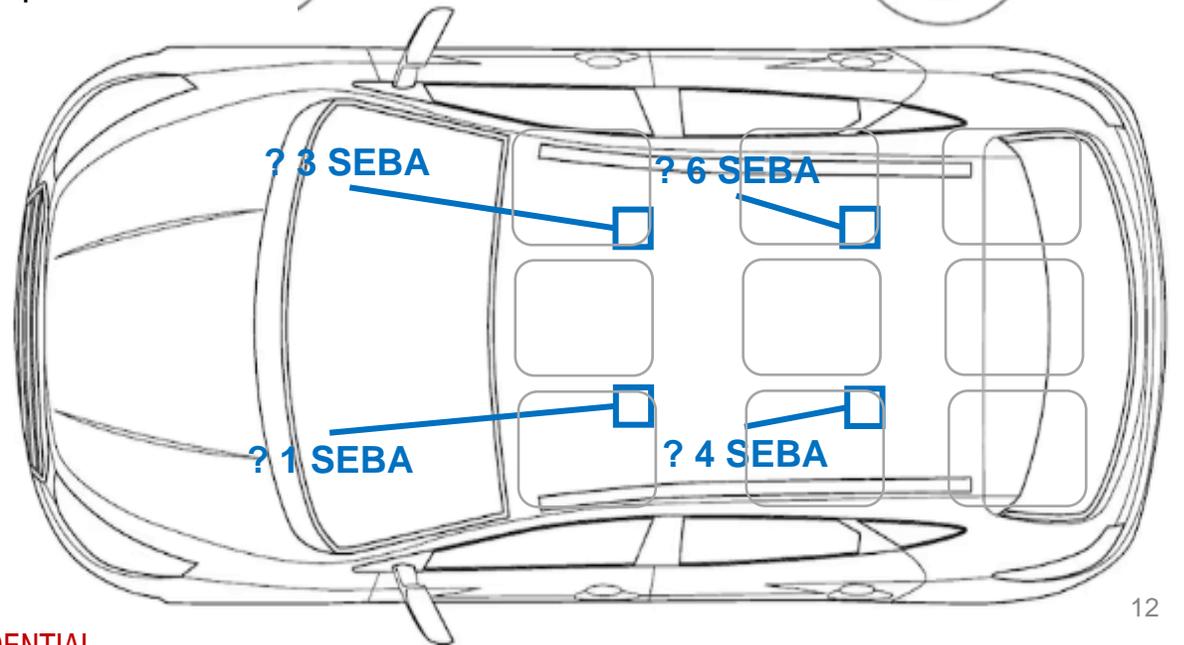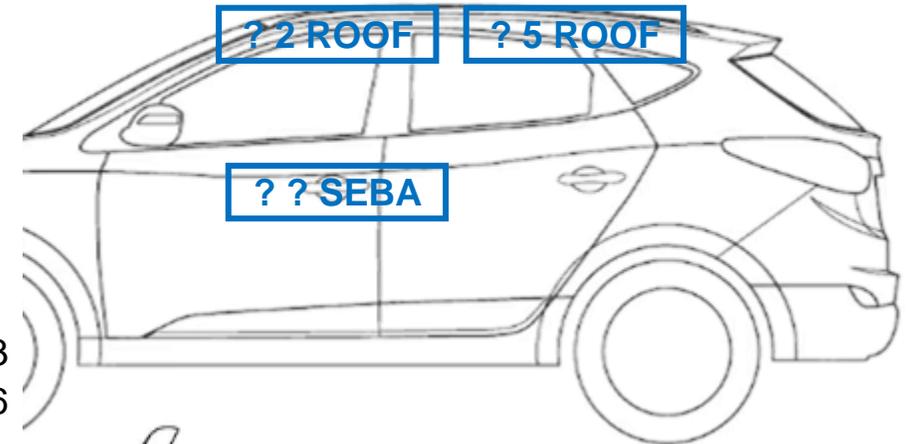
Airbags for side protection (3)

Head Airbags

```
? 1 ROFR ???? AH   Roof Frame Head Airbag (only on position 1)
? 3 ROFR ???? AH   Roof Frame Head Airbag (only on position 3)
? 4 ROFR ???? AH   Roof Frame Head Airbag
? 6 ROFR ???? AH   Roof Frame Head Airbag
? ? DOOR ???? AH   Door Head Airbag
```
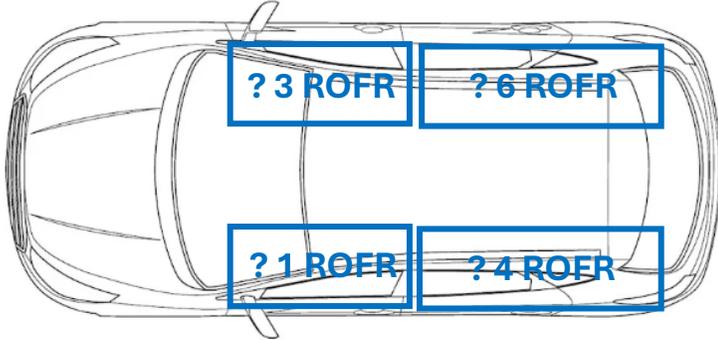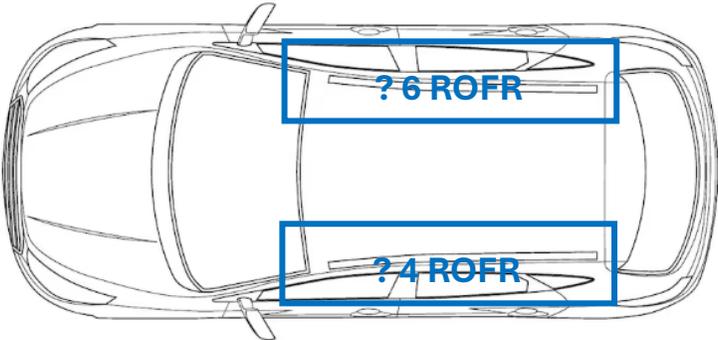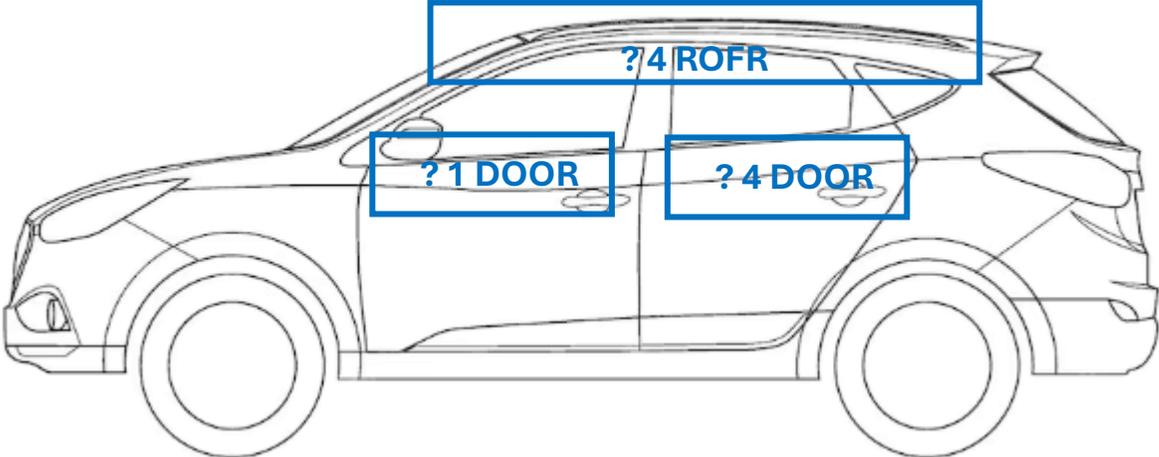
Airbags for other protection

Pedestrian Airbag

`? 2 HOOD ???? AP` Hood Airbag

`? 2 WIND ???? AP` Window Airbag

Rear Airbag

`? ? HERE ???? AR` Head Restraint Airbag

Car Airbag

`? 2 BUMP ???? AV` Bumper Airbag Front

`? 4 BUMP ???? AV` Bumper Airbag Left Side

`? 6 BUMP ???? AV` Bumper Airbag Right Side

? 6 BUMP

? 2 BUMP

? 2 HOOD

? 2 WIND

? 4 BUMP

??HERE
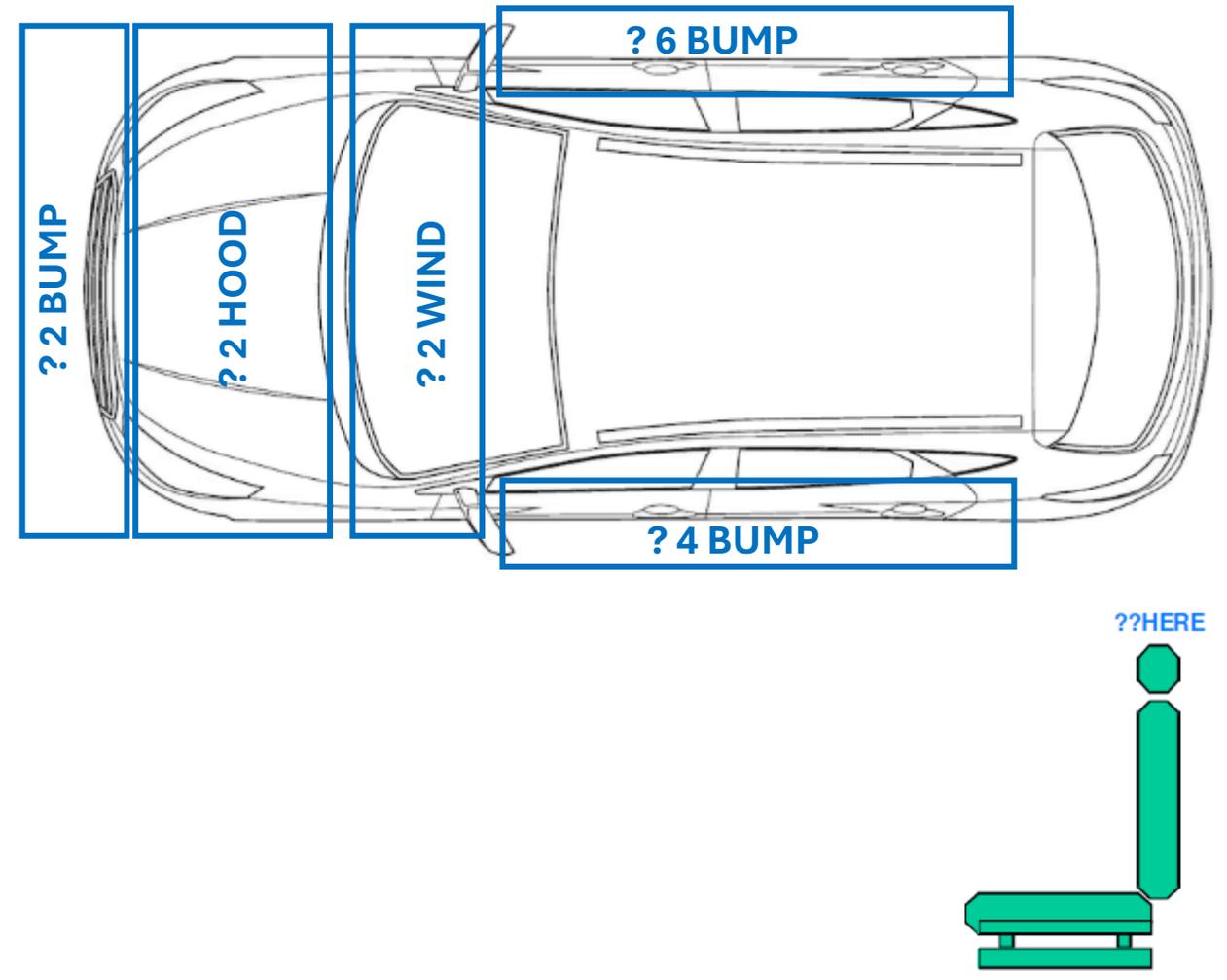
Appendix
Standards for all airbag types

Your contact person

For questions and background information

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