

**Progress Report of the
VIAQ (Vehicle Interior Air Quality)
Informal Working Group**

11th January 2017

Chair: Jongsoon Lim, Korea

Co-Chair : Yunshan GE, China

Technical secretary: Andreas Wehrmeier, OICA

● VIAQ Background, ToR and Mandate

- **WP.29 Mandate**(ECE/TRANS/WP.29/1112)
 - AC.3 endorsed the proposed action plan to, in a first stage, collect information, review existing standards and develop recommendations.
 - End of mandate : November 2017
- **GRPE Adoption**(ECE/TRANS/WP.29/GRPE/70)
 - GRPE adopted the proposals for terms of reference to the IWG on VIAQ as reproduced in Annex VI of this report.
- **Review of VIAQ Terms of Reference**
 - The scope of the work is to develop a recommendation (R.E.3, S.R.1, or a new Mutual Resolution) to harmonize test procedures of interior air emissions emitted/generated from interior materials.

● **VIAQ IWG Meetings since last GRPE**

➤ **6th VIAQ IWG Meeting**

- Drafting meeting, 22nd September 2016 (conference call)
- Paris, 26th – 27st October 2016

➤ **7th VIAQ IWG Meeting**

- Drafting meeting, 4th January 2017 (conference call)
- Geneva, Switzerland, 11th January, during 74th GRPE session

● The Direction of Work

➤ Test Measurement Modes

- Based on collected information and the review of existing standards,
- VIAQ group agreed that the following test mode is the most suitable for the interior air emission generated from interior materials.

Test mode	Descriptions
Ambient mode	simulates cars parked in the garage overnight (ambient temp)
Parking mode	simulates cars parked outside in the sunlight (high temp)
Driving mode	simulates air-conditioning conditions right after parking mode (Idling, A/C)

➤ Test Measurement Substances (8 types of VOCs)

- Substances to be measured: Formaldehyde, Acetaldehyde, Benzene, Toluene, Xylene, Ethyl benzene, Styrene, and Acrolein.

● Overall Work Status

➤ Working items : 28 total working items

- 5th VIAQ IWG : Closed working items: 15, open issue working items: 13
- 6th VIAQ IWG : Closed working items: 27, open issue working items: 1

➤ Expected Outcome: A New Mutual Resolution

- Propose for A New Mutual Resolution which is developed to harmonize test procedures of interior air emissions generated from interior materials (VIAQ-07-0x)

● Status of Working Items (VIAQ-07-04)

➤ Closed working item lists since the last GRPE meeting

✓ Vehicle categories:

- Category 1-1(according to the S.R.1, 1998 Agreement) the test procedure should cover passenger cars as well as trucks and busses used as passenger cars. However the test procedure cannot cover busses for public transport, with standing passengers and truck for transportation of goods.

✓ Ambient mode (test temperature):

- Measured values for VOCs and Aldehydes were very similar at both temperatures(23.0 °C , 25.0 °C). The test temperature of Ambient mode is from 23,0-25,0 °C , recommended to be as close as possible to 25.0 °C

● Status of Working Items (VIAQ-07-04)

- **Closed working item lists since the last GRPE meeting**
- ✓ **Ambient mode doors opening time:** should be opened for 60 min
- ✓ **Preconditioning 1 day before measurement (soak time):** Conditioning should be done nearby the test facility. Store vehicles at a temperature as close as possible to soak temperature (recommended to be 20-30 °C). Prevent vehicles from contamination and avoid direct sunlight. All doors and windows should be closed during storage time. Workers should carefully deal with the vehicle to prevent contamination.
- ✓ **Parking mode condition :** Vehicle should be tested after exposed to heat radiation from top for 4h with 400 W/m² according to ISO12219-1
- ✓ **Driving mode condition:** 23.0-25.0 °C according to ISO12219-1

● Status of Working Items (VIAQ-07-04)

- **Closed working item lists since the last GRPE meeting**
- ✓ **Repeated test:** Only 1 vehicle needs to be tested, but repeatability tests are recommended for lab validation.
- ✓ **Sampling number of cartridges:** 1 sample Aldehyde + 1 sample screening is mandatory. It is recommended to test additional sample Aldehyde + screening.
- ✓ **Sampling flow:** max. flow for DNPH cartridges up to 1.0 L/min and for Tenax TA cartridges up to 0.2 L/min
- ✓ **Sampling time:** Aldehydes and VOCs 30 min each.
- ✓ **Reports:** take over from ISO 12219-1

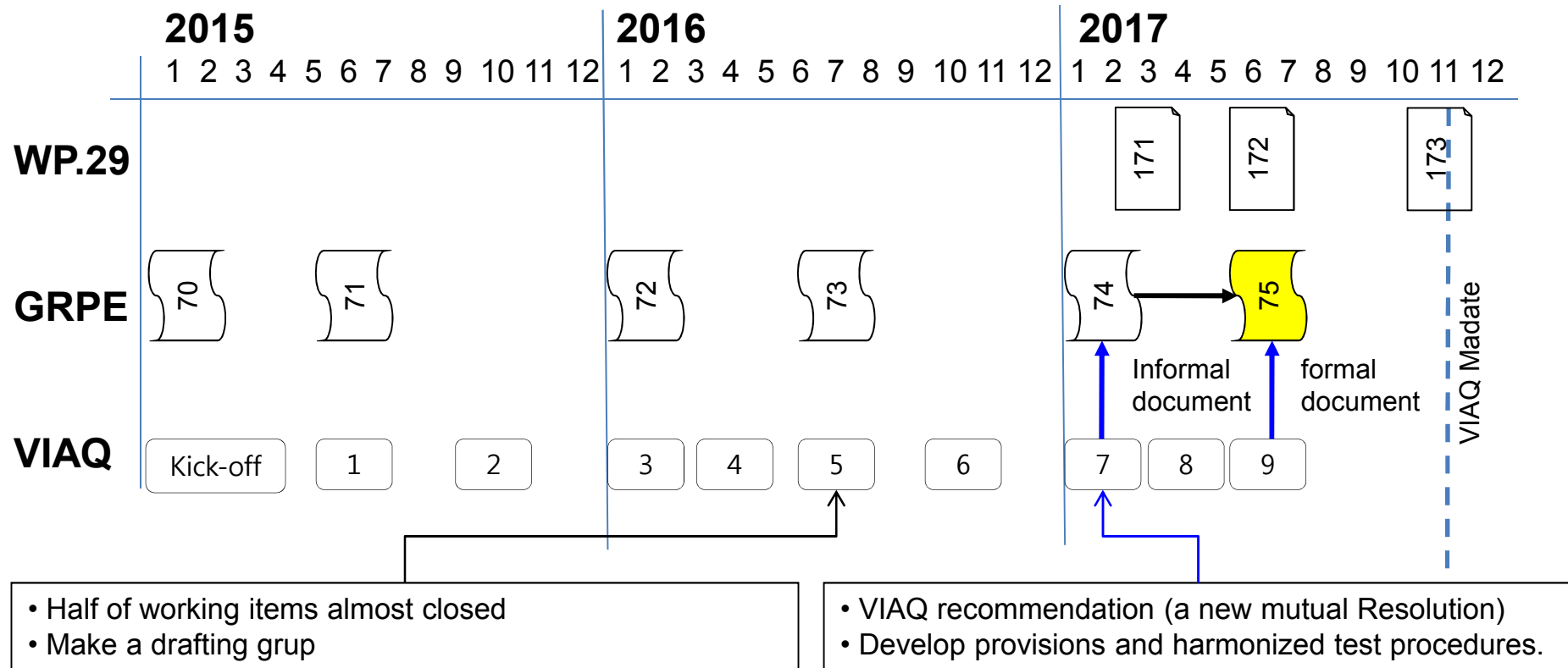
● **Status of Working Items (VIAQ-07-04)**

➤ **Open working items**

✓ **Vehicle family concept :**

- Vehicles should be grouped according to similar interior material concepts. Same upholstery (leather or textile), same surface materials, often described by same interior lines are considered as similar interior concepts.
- The selection of vehicles should be based on a family concept to minimize testing cost.
- It is recommended to measure vehicles only in one color. The color should be dark in exterior and interior (preferably black) to have the highest solar loading in parking mode testing.

● Roadmap



➤ **January 2017** : Submit the VIAQ document as an informal document

➤ **June 2017** : Submit the final VIAQ document

- **Second stage of VIAQ IWG Mandate**

- **71th GRPE Session Report (ECE/TRANS/WP.29/GRPE/71)**

XV. Vehicles Interior Air Quality (VIAQ) (agenda item 14)

Documentation: Informal document GRPE-71-30

64. The Chair of the IWG on VIAQ reported on the first meeting of the group held prior to GRPE (GRPE-71-30). He provided some information on the organization and road map of the group as well as on the work to be done.

65. The expert from the Russian Federation stated that the work should not only focus on the interior air emissions generated from interior materials but also on the air pollutants entering the vehicle together with the intake air from outside.

66. GRPE considered the inclusion in the scope of interior air pollutants from the outside air as a possible extension of the mandate at a later stage. GRPE acknowledged the progress made by the IWG on VIAQ and noted the request for a meeting room for half a day during the GRPE week in January 2016.

● **Next VIAQ IWG Meeting**

➤ **8th VIAQ IWG Meeting**

- March 2017 (TBD)

➤ **9th VIAQ IWG Meeting**

- Geneva, Switzerland, June, during 75th GRPE session
- (Half a day is requested)