

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

**MOSCOW, November 7th-8th 2018**

Chair: Andrey KOZLOV, Russian Federation

Co-Chair: Jongsoon LIM, The Republic of Korea

Secretary: Mark POLSTER, Ford

During 173<sup>rd</sup> WP.29 session in Geneva (14-17 November 2017) Proposal for a new Mutual Resolution (M.R.3) for of the 1958 and the 1998 Agreements concerning Vehicle Interior Air Quality (VIAQ) was adopted (ECE/TRANS/WP.29/2017/136)

United Nations

ECE/TRANS/WP.29/2017/136



**Economic and Social Council**

Distr.: General  
25 August 2017

Original: English

---

**Economic Commission for Europe**

Inland Transport Committee

**World Forum for Harmonization of Vehicle Regulations**

173rd session

Geneva, 14-17 November 2017

Item 8.4 of the provisional agenda

**Other business:**

**Consideration of proposals for a new mutual resolution**

**Proposal for a new Mutual Resolution (M.R.3) of the 1958 and the 1998 Agreements concerning Vehicle Interior Air Quality (VIAQ)**

**Submitted by the Working Party on Pollution and Energy\***

The text reproduced below was recommended by the Working Party on Pollution and Energy (GRPE) at its seventy-fifth session (ECE/TRANS/WP.29/GRPE/75, para. 49). It is based on ECE/TRANS/WP.29/GRPE/2017/10 amended by GRPE-75-02-Rev.1 as reproduced in Addendum 2 to the report. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Executive Committee (AC.3) of the 1998 Agreement for consideration at their November 2017 sessions.

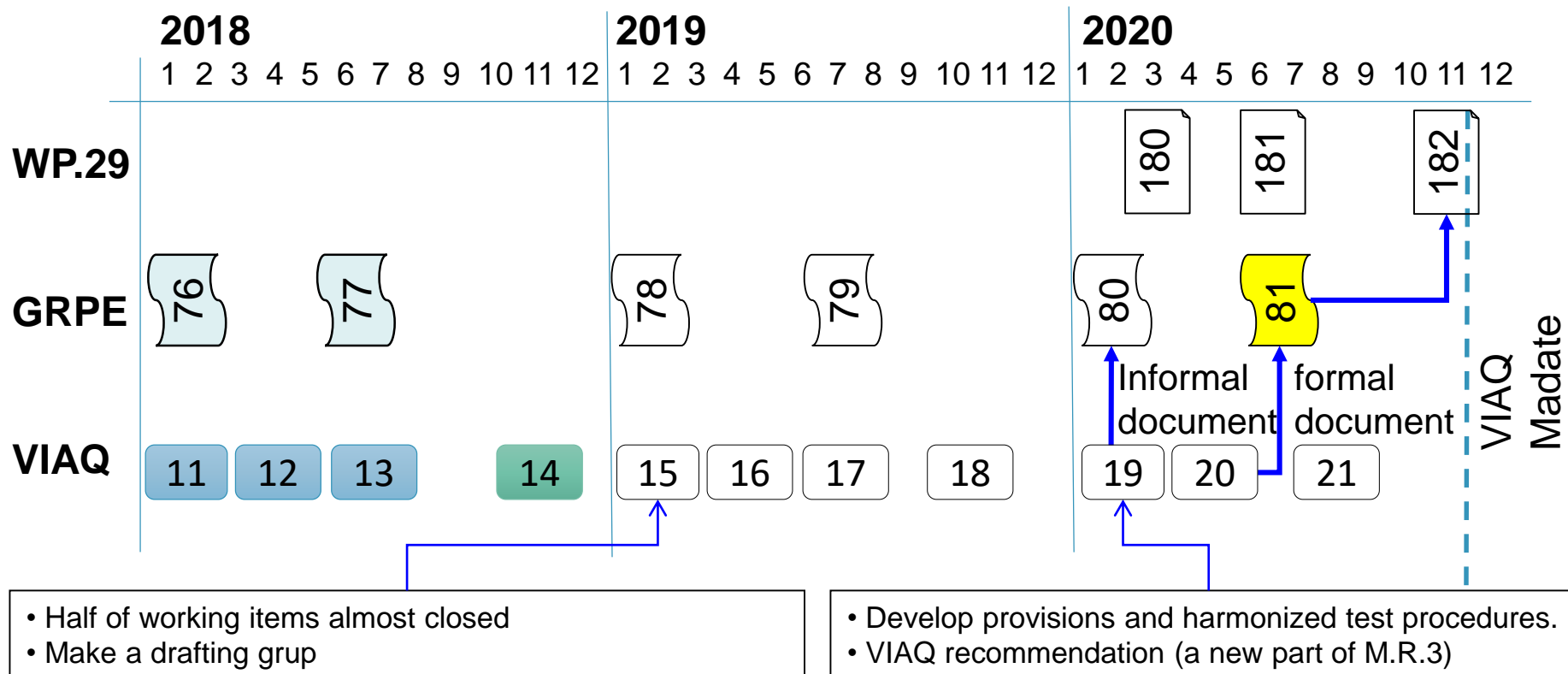
## ● VIAQ ToR and Mandate for the Second Stage

- ✓ The Chair of the IWG on Vehicles Interior Air Quality (VIAQ) presented a status report on the ongoing activities of the group (GRPE-76-35). He recalled that the original mandate of the group ended in November 2017. He highlighted the conclusion of the work by the tabled proposal for a new Mutual Resolution on recommendations to harmonize test procedures of interior air emissions generated from interior materials (ECE/TRANS/WP.29/2017/136) which was adopted by WP.29 and AC.3 during 173rd WP.29 session in Geneva (14-17 November 2017). He recalled that WP.29 endorsed the extension of the mandate of the IWG on VIAQ until November 2020 to extend the work and consider not only emissions generated by interior materials, but also gases from other sources that enter into the vehicle cabin.
- ✓ As Chair for the new stage of the IWG on VIAQ, the expert from the Russian Federation highlighted the existing standards on VIAQ in his country. He presented the revised Terms of Reference for the IWG on VIAQ (GRPE-76-27) which were adopted by GRPE

## ● Terms of reference

- ✓ Identify and collect the information and research data on interior air quality and its relevance for vehicles, taking into account the activities being carried out by various governments, and non-governmental organizations.
- ✓ Identify and understand the current regulatory requirements with respect to vehicle interior air quality in different markets.
- ✓ Identify, review and assess existing test procedures suitable for the measurement of harmful substance into the vehicle cabin (including test modes, sample collection methods and analysis methods, etc.)
- ✓ Develop provisions and test procedures in a recommendation by including Part 3 in the Mutual Resolution No. 3.

## ● Timeline



- **January 2020:** Submit the draft document to GRPE
- **June 2020:** Adoption of the draft document by GRPE
- **November 2020:** Adoption of the draft document by WP.29

## ➤ **13th VIAQ IWG Meeting**

- Geneva, Switzerland, June 6<sup>th</sup> 2018
- Half a day

## ➤ **14th VIAQ IWG Meeting**

- Moscow, Russian Federation, November 7-8<sup>th</sup> 2018
- Two days

**1.Vehicle Category**

**2.Test Vehicle age/millage**

**3.Substances to be Measured**

**4.Meteorological Conditions**

**5.Test Conditions**

**6.Test Modes**

**7.HVAC Modes**

**8.Test Procedure**

**9.Measurement Methods**

**10.Sampling Points**

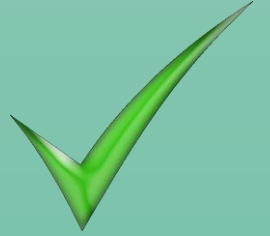
**11.Sampling Method**

**12.Test Protocol**



## 1. Vehicle Category

Agreed Item



# Category 1-1



## 2. Test Vehicle age/millage

Agreed Item

New cars from series production  
Millage  
3 000 -15 000 km



## 3. Substances to be Measured

### Russian Standard

Formaldehyde  $\text{CH}_2\text{O}$   
Nitrogen dioxide  $\text{NO}_2$   
Nitrogen oxide  $\text{NO}$   
Carbon monoxide  $\text{CO}$   
Saturated hydrocarbons ( $\text{C}_2\text{H}_6 \dots \text{C}_7\text{H}_{16}$ )  
Methane  $\text{CH}_4$

### Agreed substances



Carbon monoxide  $\text{CO}$   
Nitrogen oxide  $\text{NO}$   
Nitrogen dioxide  $\text{NO}_2$   
Formaldehyde  $\text{CH}_2\text{O}$   
Methane  $\text{CH}_4$  (only for natural gas vehicles)

### Korea

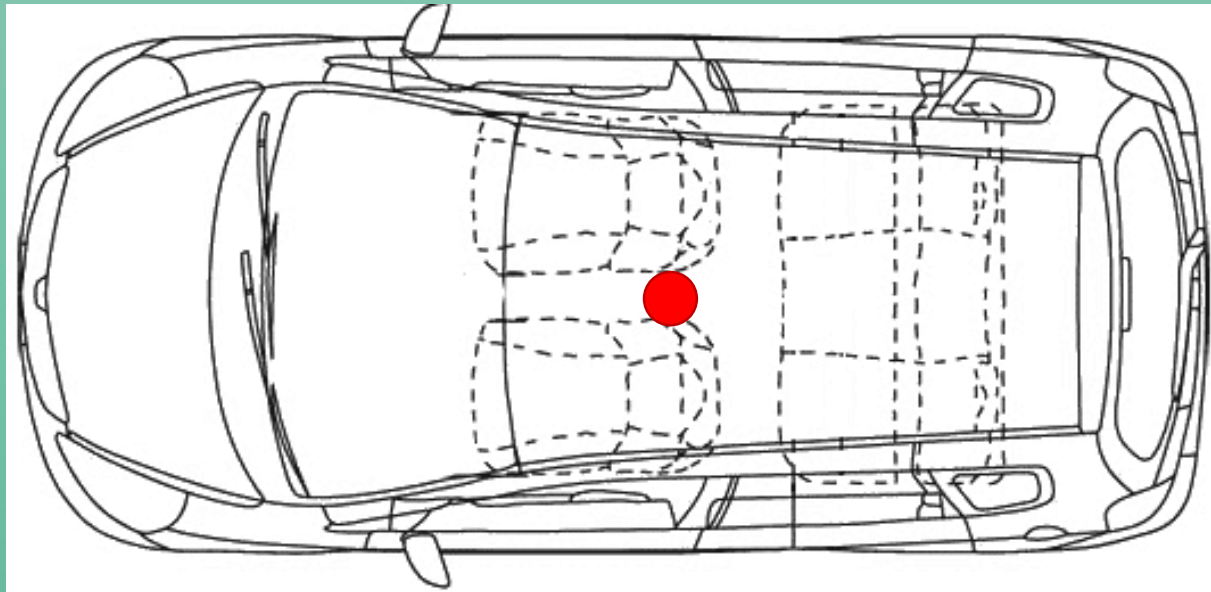
Carbon monoxide  $\text{CO}$   
Nitrogen oxide  $\text{NO}$   
Nitrogen dioxide  $\text{NO}_2$

For discussion  
(see VIAQ-13-04 and VIAQ-14-04)

Particulate matter (PM)

## 10. Sampling Points

Agreed Item



The point between headrests of front seats

## 4. Meteorological Conditions / 5. Test Conditions

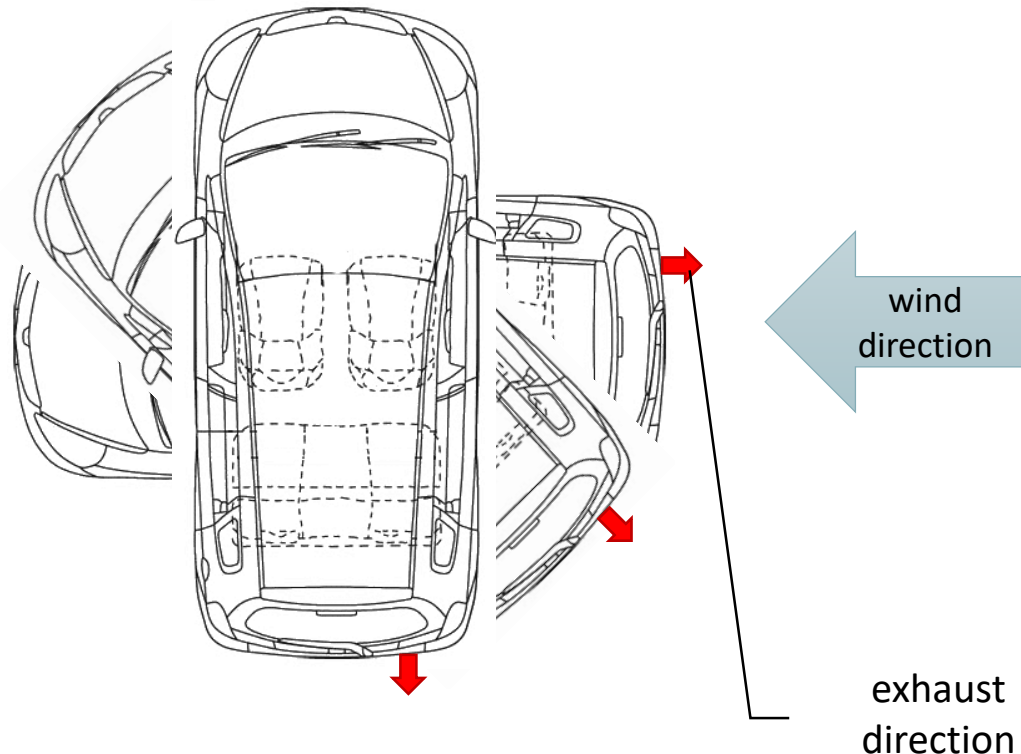
Tests of influence of wind speed and direction to concentration of substances inside a vehicle cabin at idling

### Wind speed:

- 0 m/s
- 1 m/s
- 2 m/s
- 3 m/s
- 4 m/s
- 5 m/s

### Wind direction:

- 0 deg.
- 45 deg.
- 90 deg.



Test facility is the wind tunell in NAMI test center

## 6.Test Modes / 7.HVAC Modes

Different combinations of vehicle movement and HVAC modes was carried out

### 1. Movement at constant speed

- 50 km/h
- 90 km/h
- 110 km/h
- 130 km/h

### 2. Idling

### 3. Acceleration from speed of 60 km/h at WOT to speed of 130 km/h and free coasting down to speed of 60 km/h

On each of the driving and idling modes, the measurements of the pollutants were made during the performances of the following operating modes of the ventilation and recirculation systems

Recirculation mode	Ventilation speed			
	Off	Minimal	Medium	Maximum
Off	✓	✓	✓	✓
On	✓	✓	✓	✓

➤ **15<sup>th</sup> VIAQ IWG Meeting (TBD)**

- Geneva, Switzerland, 9<sup>th</sup> January 2019 during 78<sup>th</sup> GRPE session
- Half a day

➤ **16<sup>th</sup> VIAQ IWG Meeting (TBD)**

- TBC, March-April 2019
- Two days