

A dark blue background featuring a stylized world map. Overlaid on the map is a network of light blue lines connecting various points, suggesting global connectivity or a digital network.

# **Summary of Opinions about CLIV Regulation Direction for Light-duty Vehicle**

Submitted by experts from China

## 1、 Technology fusion overview (Page 6)

CLEPA's opinion	General regulatory approach: define tests that need to be met - whatever technology or combination is used ( <b>regulation must be “technology neutral”</b> ). Some combinations appear not to have an added value; a multitude of other combinations is possible The focus should be on useful warnings/interventions.
Updated Korea's opinion	Technologies should not be specified because <b>regulation should remain technology neutral and should not stop the development of new technology.</b>
Australia's opinion	Australia agrees with this regulatory approach, therefore supports the opinions put forward.
ANEC's opinion	Agree.
JAPAN's opinion	...
GCC's opinion	...
OICA's opinion	<b>Regulatory approach must be consistent with existing NCAP protocols</b> i.e. complying with regulation must not invalidate NCAP score and meeting NCAP requirements must not compromise compliance with regulation.
China's opinion	Agree. The regulations should not limit what technical means to use. Keep technology neutral. Yes, like OICA's opinion, regulations are the basic requirements, and they may be somewhat lower than the requirements of NCAP, but they should not be in conflict with each other.
Primary summary	<b>The regulations should not limit what technical means to use. Keep technology neutral. Regulations and NCAP should not be in conflict with each other.</b>

## 2、Scenarios 1&2, test cases, child ages and CRS types (Page 7)

CLEPA's opinion	A proper description of test cases is needed.
Updated Korea's opinion	Having multiple scenarios for test would make test procedures complicated. Let's keep test procedures as simple as possible.
Australia's opinion	Agree that the worst-case detection is the basis for this requirement. Therefore, the new born is setting the minimum requirement for this regulation, as specified in Test 1.
ANEC's opinion	...
JAPAN's opinion	...
GCC's opinion	...
OICA's opinion	...
China's opinion	<p>Since the system is required to be able to detect children aged 0 to 6 years old, the 0-year-old and 6-year-old tests need to be covered. And it is necessary to cover children who are seated in forward-facing and rear-facing CRS (prevent the sensors from being installed only at the back or only at the front), so we suggest that Test 1 and Test 6 are necessary.</p> <p><b>Test 1: The newborn dummy is used to sit on the rearward-facing CRS, and the dummy is in a sleeping state.</b></p> <p>Test 2: A one-year-old dummy is used to sit on a rearward-facing CRS, and the dummy is in a sleeping state.</p> <p>Test 3: A one-year-old dummy is used to sit on a rearward-facing CRS, and the dummy is awake (can have movement).</p> <p>Test 4: A 3-year-old dummy is used to sit on a forward-facing CRS, and the dummy is in a sleeping state.</p> <p>Test 5: A 3-year-old dummy is used to ride on a forward-facing CRS, and the dummy is awake (can have movement).</p> <p><b>Test 6: A 6-year-old dummy is used to sit on a forward-facing CRS, and the dummy is in a sleeping state.</b></p> <p>Test 7: A 6-year-old dummy is used to sit on a forward-facing CRS, and the dummy is awake (can have movement);</p>
Primary summary	TBD, suggest at least include test 1 and test 6.

### 3&4、 Temporary deactivation (Page 9) and Long term deactivation (Page 9)

<b>CLEPA's opinion</b>	CLEPA is open for some flexibility related to temporary or long-term deactivation.
<b>Updated Korea's opinion</b>	Deactivation functions should be mandatory. How to deactivate can be up to the manufacturers.
<b>Australia's opinion</b>	<b>Australia agrees in principle in that a Temporary Deactivation and Long Term Deactivation system maybe an option to be fitted to a vehicle if the manufacturer chooses too.</b> With the function of the temporary deactivation system, the CLIV warning function system shall be automatically reinstated at the initiation of each new ignition “on” (run) cycle. For the long term deactivation system, a set of sequences would be preferable. Long term deactivation can only be engaged via OEMs diagnostic tool either programming or software configuration. <b>Therefore, support with China in that it is not a mandatory system to be installed, it requires a series of requirements and a misuse fail safe function structure.</b>
<b>ANEC's opinion</b>	Temporary deactivation only for specific situations. We see no justification for long term de-activation for consumers, only risks voor next owners of the vehicle. (What about dog owners?)
<b>JAPAN's opinion</b>	...
<b>GCC's opinion</b>	...
<b>OICA's opinion</b>	<b>For long term deactivation: Fully agree with Korea opinion. Many users have no use for this technology (don't carry children in vehicles) so there should be an option to deactivate to prevent customer annoyance.</b> Potentially add a regular reminder to re-activate or otherwise.
<b>China's opinion</b>	Agree with Australia, our position has always been that the temporary and long-term deactivation functions are not mandatory, it is up to the manufacturer to decide whether to install it or not. But if the vehicle has this function, it needs to meet a series of requirements. Such as avoiding misuse and providing status indication after deactivation.
<b>Primary summary</b>	<b>TBD</b>

## 5、System trigger (page 10)

CLEPA's opinion	a) CLEPA OK with <b>15s</b> ; 3 min would be too long. b) in-vehicle reminder is OK, but not sufficient as the only warning c) not needed if "gained access" is not covered
Updated Korea's opinion	Warning within 15 seconds after vehicle locking might be too short. <b>At lease 30 seconds</b> after vehicle doors are locked and the interior of vehicle is stabilized seems suitable to prevent false alarm. Allowing delay up to 10 minutes might be necessary in some cases.
Australia's opinion	Agree with one point from CLEPA that 3 minutes is too long, but align with South Korea's opinion for <b>a maximin 60 second</b> duration period. This permits stabilization of the vehicle's interior before the system is monitoring.
ANEC's opinion	a) 15 sec = Max trigger time allowed, <b>the shorter the better. Prefer max 1 sec</b> b) In-vehicle reminder only to support, not stand alone warning
JAPAN's opinion	c) What is the intention behind extending the initial alarm?
GCC's opinion	4/6 agree. Direct detection systems [The system is intended to detect school aged children in the passenger compartment <b>within [1] minutes</b> after the ignition switch or master control switch is deactivated and the doors are locked. Upon successful detection the system shall generate a warning to a person exterior to and in the direct vicinity of the vehicle.]
OICA's opinion	...
China's opinion	a) <b>Agree the trigger time is the shorter the better.</b> It is necessary to reach a stable state before the warning is triggered, this is a problem that vehicle manufacturers need to solve. Perhaps it would be necessary to ask the vehicle manufacturer how long it will take for the system to reach a stable state. Is 60 seconds too long? Parents might have already left far away from the vehicle (60 seconds may walk 50 to 100 meters), maybe not be possible to see or hear the warning signal. b) Agree with "in-vehicle reminder is OK, but not sufficient as the only warning." c) Answer questions from Japan: If the parents get off the car temporarily for a short period of time (such as at a gas station), they can activate the system's delay function to delay the warning, but the delay cannot exceed 10 minutes.
Primary summary	<b>TBD, suggest trigger time should be determined after discussion (current options include: 15s, 30s and 60s)</b>

## 6、ATD for direct sensing (Page 15)

<b>CLEPA's opinion</b>	Test tools are needed for UN regulation testing, ongoing discussions and development activities; dedicated ISO CPD test tool group.
<b>Updated Korea's opinion</b>	Whichever CPD surrogate is chosen for the regulation, the CPD surrogate should be available in the market and OEMs should be given enough time to develop technology before the regulation enters into force.
<b>Australia's opinion</b>	There are key detecting points from ISO. Agreement with CLEPA and South Korea's opinions. Furthermore, not to test out of the seat position, these requirements need to be clearly defined.
<b>ANEC's opinion</b>	<b>Create plan B, should ISO not be able to deliver in time and/or meet UNECE requirements for inclusion in MR1.</b> WorldSID is not in M.R.1 (yet), only reference to ISO.
<b>JAPAN's opinion</b>	We agree with the ATD being discussed by the ISO CPD test tool Group.
<b>GCC's opinion</b>	...
<b>OICA's opinion</b>	Currently no certified ATDs for this regulation, OEMs cannot be responsible for this. OICA generally opposed to a unique ATD for CLIV. Regulation should wait for ISO group's work to be completed.
<b>China's opinion</b>	Agree with all the opinions.
<b>Primary summary</b>	<b>Dedicated ISO CPD test tool group. Think about whether to create a plan B.</b>

## 7、 applicable categories M1 & N1 (Page 17)

<b>CLEPA's opinion</b>	Ensure that vehicles typically used as "family cars" are covered within the regulation; include "large" SUVs and pick-up trucks; extension of current TOR likely needed.
<b>Updated Korea's opinion</b>	M category must be included. N can be optional depending on the choice of each CP.
<b>Australia's opinion</b>	In the Australian market, the most popular vehicle sold and driven are the N1 category vehicles. As these N1 vehicles are also being utilized as common family vehicles, as well as for their intended manufactured use. <b>Australia supports CLEPA and China's position. This being the case, the IWG is to consider inclusion N1 in scope through TOR.</b>
<b>ANEC's opinion</b>	<b>Agree with CLEPA</b> <b>Also N1 with one seating row (1 or 2 passenger seats) should be considered.</b> Check S.R.1 for scope.
<b>JAPAN's opinion</b>	...
<b>GCC's opinion</b>	...
<b>OICA's opinion</b>	Further discussion is required. <b>Prefer to have this as open as possible for the CPs to decide which vehicle categories to include in their domestic regulation.</b>
<b>China's opinion</b>	Agree with Australia, M1 category must be included. Children may also travel by N1 vehicles, so N1 should be considered.
<b>Primary summary</b>	<b>M1 category must be included, the IWG is to consider extension of current TOR and N1 may be considered.</b>



## 8、detection range (Page 17)

CLEPA's opinion	<b>rear row seats (3rd row - if fitted - included) and front passenger seat</b> ; seating positions relevant for “child left behind”
Updated Korea's opinion	<b>Only the rear seats</b> . Front row seats, footwells or anywhere that are not intended to put children should be excluded.
Australia's opinion	Australia's position is that <b>every seat row (not seating position) is to be tested. Driver's seat excluded</b> .
ANEC's opinion	<b>Front row should be included</b> . CRS use is permitted on front passenger seats in Europe, some vehicles are equipped with Isofix on front passenger seat. So <b>all seating rows should be covered</b> .
JAPAN's opinion	We consider this concerns <b>only the second and subsequent row of seats in M1 and N1 vehicles</b> , where children are likely to be seated.
GCC's opinion	...
OICA's opinion	OICA view is that this regulation should focus on <b>second row occupants</b> in the initial instance as these are the most likely locations of CLIV. Luggage Area / Footwell area should not be included in the detection zone.
China's opinion	Agree with Korea and JAPAN, in China, the proportion of children sitting in the rear seats is much higher than that in the front seats (Some local traffic regulations do not allow children to sit in the front seats). <b>So in the first phase, the regulation only cover the rear row seats.</b>
Primary summary	TBD, how to think about front row (excluded driver seat) and rear row seats.



## 9、 way of detection: indirect or direct? (Page 17)

<b>CLEPA's opinion</b>	<b>requirement for direct sensing</b> (while allowing support from indirect systems for driver information/alerts, but not as standalone system).
<b>Updated Korea's opinion</b>	As long as children left in vehicle can be detected, any system can be used.
<b>Australia's opinion</b>	<b>Agree with CLEPA</b> , that indirect sensor technology is to enhance/complement the direct detection system only if the manufacturer chooses. <b>The main monitoring is primarily done by the direct sensing system.</b>
<b>ANEC's opinion</b>	<b>Agree with CLEPA</b> , regarding direct / indirect sensing. <b>Any technology that does the job is acceptable, but must be robust</b> (avoid false positives). <b>Indirect sensing is considered not robust enough.</b>
<b>JAPAN's opinion</b>	The point is to satisfy the test methods and their requirements; detection methods should not be specified.
<b>GCC's opinion</b>	...
<b>OICA's opinion</b>	Regulation should be technology neutral concentrating on the problem to be resolved, Agree with Korea opinion 2)
<b>China's opinion</b>	No matter what technology is used, as long as it meets regulatory requirements.
<b>Primary summary</b>	<b>TBD, only direct sensing or direct &amp; indirect sensing.</b>

## 10、 age range (Page 17)

<b>CLEPA's opinion</b>	<b>0 - 6 years;</b> future discussion needed on how to deal with situations where adult is still in vehicle.
<b>Updated Korea's opinion</b>	If rear facing CRS would be an issue, include both rear and forward facing CRS in the test. We just need to agree on the CPD surrogate to put in CRS.
<b>Australia's opinion</b>	Agree with South Korea's view, that <b>a 0 year old should be the worst case scenario.</b>
<b>ANEC's opinion</b>	Agree with China feedback.
<b>JAPAN's opinion</b>	<b>We agree that the CPD system should apply to children aged 0–6.</b> <b>We suggest evaluating children aged 0 and 6.</b>
<b>GCC's opinion</b>	...
<b>OICA's opinion</b>	<b>Need to clarify whether the regulation intends the detection of 0-5 year old or of 0-6 years old, as the technical difficulties in detecting older children (6yo) increases the rate of false detection.</b> NOTE: ISO work is concentrating on ATDs for new born, 1 year old, 3 year old, 6 year old.
<b>China's opinion</b>	Agree with Japan, the CPD system should be capable of detecting children aged 0 to 6 years old. Test at least using children aged 0 and 6 years old ATD. Warnings could be suppressed, if there are adults in the car.
<b>Primary summary</b>	<b>TBD, test only cover 0 year old or 0 &amp;6 years old.</b>

## 11、 scenarios to be covered (Page 17)

CLEPA's opinion	CLEPA in favor of focusing on " <b>child left behind</b> " in UN regulation.
Updated Korea's opinion	<b>Children intentionally/unintentionally left in vehicle.</b>
Australia's opinion	<b>First version of the regulation should seek to address 2 scenarios. These scenarios are for unknowingly or knowingly not gained access requirement.</b>
ANEC's opinion	...
JAPAN's opinion	Japan thinks options may be available based on accident conditions and regional differences by each countries.
GCC's opinion	...
OICA's opinion	<b>OICA is of the view that regulation should first focus on the main cause of the issue (Intentional/Unintentional child left behind case)</b> and its requirements shall be drafted to mitigate risks around it as a priority. Other cases like scenario 3 ("Gained Access" case) may be further discussed as a next step of the task of CLIV-IWG along with additional research/data as to its frequency(Fatalities), root cause analysis, possible technical countermeasures etc
China's opinion	Agree with the scenarios cover children intentionally/unintentionally left in vehicle, not include "Gained Access" case.
Primary summary	<b>Cover children intentionally/unintentionally left in vehicle, not include "Gained Access" case.</b>

## 12、self-check (Page 18)

<b>CLEPA's opinion</b>	<b>'Self-check - warning to the driver shall be given if failure is detected</b> (if not already part of OEM specifications -> OICA is investigating; should these CPD self-checks be done at beginning or end of journey?)
<b>Updated Korea's opinion</b>	Exclude from the regulation.
<b>Australia's opinion</b>	Australia stipulates that if the system fails for a tell-tale symbol to illuminate to warn the driver of this malfunction. UN R121?
<b>ANEC's opinion</b>	Driver should be informed on malfunctioning of the system and that one cannot rely on it anymore.
<b>JAPAN's opinion</b>	Self-checks are not necessary, but manufacturers are responsible for notifying users of malfunctions.
<b>GCC's opinion</b>	...
<b>OICA's opinion</b>	Warning may have more value if done at 'end of journey'.
<b>China's opinion</b>	Agree with Japan, Self-checks are not necessary, but manufacturers are responsible for notifying users of malfunctions.
<b>Primary summary</b>	<b>TBD, exclude or include self-check, and if the system fails for a tell-tale symbol to illuminate to warn the driver of this malfunction.</b>

### 13、special scenarios (Page 18)

<b>CLEPA's opinion</b>	Child without CRS is possibly a meaningful test case for certain world regions. More than one child in the vehicle - CPD systems shall cover such a situation. Mid-journey getting on and off the vehicle - should not be relevant for direct sensing (was an issue for certain implementations of indirect systems).
<b>Updated Korea's opinion</b>	Unnecessary
<b>Australia's opinion</b>	Australia's feedback is that each seating row (not seat position) is to be tested, whether a child anchor point is installed or not.
<b>ANEC's opinion</b>	agree CLEPA
<b>JAPAN's opinion</b>	If some special scenarios are deemed necessary, they should be discussed.
<b>GCC's opinion</b>	...
<b>OICA's opinion</b>	...
<b>China's opinion</b>	Child without CRS is possibly a meaningful test case for certain world regions, so "Child without CRS" needs to be taken into consideration.
<b>Primary summary</b>	<b>TBD, Further discussion is needed.</b>

## 14、 System robustness (Page 18)

<b>CLEPA's opinion</b>	System robustness assessments could be considered.
<b>Updated Korea's opinion</b>	Unnecessary. If the system is not robust, OEMs would not accept the product from suppliers.
<b>Australia's opinion</b>	Australia's feedback is UN R10 is to be considered within this requirement.
<b>ANEC's opinion</b>	...
<b>JAPAN's opinion</b>	These contents should be covered by test conditions.
<b>GCC's opinion</b>	...
<b>OICA's opinion</b>	...
<b>China's opinion</b>	Agree with Japan, these contents should be covered by test conditions. Corresponding testing conditions that affect system robustness should be considered for different technical means, such as camera systems need to be tested both day and night.
<b>Primary summary</b>	<b>TBD, Further discussion is needed.</b>

## 15、Types of alert signals

CLEPA's opinion	...
Updated Korea's opinion	<b>audible &amp; visual</b> It is a minimum requirement, not NCAP. Regulation should not be same with NCAP.
Australia's opinion	Australia agrees with the following opinions of South Korea: <ul style="list-style-type: none"><li>• <b>Warning should be the same with buses.</b> Agree.</li><li>• Is there any other vehicle warnings that involves smart keys or smartphone? Disagree, needs to be kept to the scope of the vehicle.</li><li>• <b>Additional warnings can be provided by vehicle manufacturers, but that should not be regulation.</b> This is a vehicle regulation. Children left in vehicle should be detected by vehicle and alerted by vehicle. Agree.</li></ul>
ANEC's opinion	<b>Standardisation of warning signals is highly desirable</b> in order to facilitate recognition of the danger by driver and/or bystanders. Think of rental cars on holydays, families owning several vehicles etc.
JAPAN's opinion	<b>Audible &amp; visual (vehicle)</b> Warnings other than those from the vehicle such as smartphones, etc. should be provided by manufacturers as an additional feature and should not be included in regulations on vehicles. <b>Regulations on audible and visual alerts outside the vehicle should consider harmonization with local regulations.</b>
GCC's opinion	...
OICA's opinion	...
China's opinion	Agree with audible & visual from vehicle. Additional warnings can be provided by vehicle manufacturers, but that should not be regulation.
Primary summary	<b>Audible &amp; visual from vehicle, discuss whether standardisation of warning signals or not.</b>



16、 Warning phases (initial to escalation)	
CLEPA's opinion	...
Updated Korea's opinion	Need more explanation and discussion.
Australia's opinion	A vehicle warning system is the minimum requirement. As for an escalation type warning as in telematics for example is a vehicle manufacturer option. Therefore, agree with South Korea in “keeping it simple”.
ANEC's opinion	Need for phased warning, especially for scenario 2 (knowingly left) and 3 (gaining access).
JAPAN's opinion	Not necessary. Warnings should be kept simple
GCC's opinion	...
OICA's opinion	...
China's opinion	Not include in the regulation in the first phase temporarily.
Primary summary	TBD, Further discussion is needed.

17、 Intervention	
CLEPA's opinion	...
Updated Korea's opinion	Unnecessary. If it is not mandatory, why does it have to be included in the regulation?
Australia's opinion	Agree with South Korea. The interventions of lowering windows in some form for example will affect other GTRs and UN Rs, therefore, this is outside of the scope of this work and not to be considered.
ANEC's opinion	...
JAPAN's opinion	Unnecessary. The proposed measures may be insufficiently effective or exceed the role of the vehicle.
GCC's opinion	...
OICA's opinion	<b>Intervention methodology must be with in the scope/responsibility of the vehicle designer.</b> It also needs to be cognisant of vehicle security requirements and not allow unauthorised access). <b>Intervention strategies must be technically neutral, outcome focussed and not design restrictive</b> Example : Regulation could allow switching on of the HVAC as a potential intervention
China's opinion	Not include in the regulation in the first phase temporarily.
Primary summary	<b>TBD, Further discussion is needed.</b>

18、Cancellation of alarm	
CLEPA's opinion	...
Updated Korea's opinion	Close range cancellation might be favolable to some users, but would that be desirable in the aspect of safety?
Australia's opinion	Agree with South Korea in that a physical action must take place. This should include additional sequence of events, opening at least one front and one rear door for example.
ANEC's opinion	Agree with Korea
JAPAN's opinion	Cancellation should be based on the driver opening the door.
GCC's opinion	...
OICA's opinion	<b>OICA agree with China opinion - in addition to the physical door opening, there shall also be other options that can be implemented as a way of cancelling alarms</b> (Not from a distance and by acknowledging the warning) Euro-NCAP protocol may be a good reference here
China's opinion	Agree with opening the door is the most effective way. If other close range cancellation methods are allowed remains to be discussed.
Primary summary	<b>TBD, Further discussion is needed.</b>

## 19、 False positive

CLEPA's opinion	...
Updated Korea's opinion	Exclude from the regulation.
Australia's opinion	Agree with South Korea, the vehicle manufacturer is to design and construct their system to function correctly. Regulating this is outside of the scope of this work.
ANEC's opinion	<b>Support base decreases when a supplier brings a system to the market that gives a lot of false alarms.</b> How is this arranged for anti-burglary systems for vehicles?
JAPAN's opinion	False positives should not be included in the regulations.
GCC's opinion	...
OICA's opinion	OICA believe we need to look into what successful detection rate would be perceived as safe system for CPD and what would be seen as inadequate in terms of detection rate, before discussing the detailed requirements including the pass/fail criteria for the regulation.
China's opinion	Agree exclude from the regulation.
Primary summary	<b>TBD, Further discussion is needed.</b>

20、General Comments	
CLEPA's opinion	...
Updated Korea's opinion	...
Australia's opinion	...
ANEC's opinion	...
JAPAN's opinion	...
GCC's opinion	...
OICA's opinion	OICA proposes the IWG arranges a technical workshop with Technical Services to determine how the regulation will work, how Technical Services will implement the regulation and determine compliance in practice.
China's opinion	Further discussion is required.
Primary summary	<b>The IWG will consider this issue.</b>

Note: The suggestion from GCC seems to be related to bus requirements (Regarding the document “CLIV IWG-09-02 gtr.docx”).This document does not list everything about GCC's opinion.

**Thanks for your attention!**