DRAFT REPORT

4th meeting of the GRSG informal group on Accident Emergency Call System (AECS)

Venue: OICA, 4 rue de Berri, F – 75008 Paris, France

Chairman: Mr. Denis Zagarin (RUS) (zagarin@autorc.ru)
Secretariat: Mr. Olivier Fontaine (OICA) (ofontaine@oica.net)

Dates: Monday 28 April 2014 until Wednesday 30 April 2014

1. Welcome and Introduction

The Chair announced his plan to present the revised Terms of Reference and an informal group report at the forthcoming GRSG session (106th). This last document was to be improved according to the discussions of this meeting.

2. Approval of the agenda

Document: AECS-04-01 (Chair - Secretariat)

The agenda was adopted with some changes as the experts agreed to base their discussions on document AECS-03-14 (main outcomes of GRSG-AECS-03).

3. Revision and approval of the draft minutes of the 3rd meeting

Document: AECS-03-13 (Chair) draft report
AECS-03-14 (Chair - Secretariat) Main outcomes of the 3rd meeting

The minutes were not reviewed to lack of time. The experts requested that the minutes of the next meetings be available sufficiently in advance for permitting comments prior the session.

4. Outcomes of 162 session of WP.29, 11-14 March 2014

Document: ECE/TRANS/WP.29/1108 (Chair - Secretariat)

The chair informed that the representative of RUS at WP29 requested clarity about the AECD/AECS homologation procedure and that the document WP.29-162-19 would be discussed at the AECS informal group. The experts were informed that in general the Contracting Parties at WP29 did not support the proposal. RUS recommended not discussing the RUS document at this session, as it is not of any interest since all depends on the outcomes of this informal group meeting.

Conclusion: the Chair will report back to GRSG that the issue raised by the document is under discussion at the GRSG informal group on AECS.

5. Discussion of the AECS Progress report for 106th GRSG session, 5-9 May 2014 (the scope and main issues for guidance)

Document: AECS-04-07 (Chair)

The Chair presented the document as the draft status report on AECS for GRSG-106. The experts discussed the document and agreed on some amendments. The document was then presented at the 106th session of GRSG under the reference GRSG-106-31.

6. Discussion of the List of disagreements

Document: AECS-04-02 (RUS)

The representative of RUS introduced the document AECS-04-02 as an attempt to solve and fix the experts' positions on the main items and informed that there is no new proposal in this document. OICA and CLEPA clarified that they could not assume that there is an agreement for each item of the document where there is no comment. The Secretariat found inadequate to base the debates on such document as it may not well catch the final solution, at least for what concerns the structure of the text. RUS was keen that a clear document be produced to reflect the status of the discussions, and recommended to go to a higher level of discussion (homologation process).

Conclusion:

- 1st step: group to base the discussions on document AECS-03-14,
- 2nd step: agreement to use the matrix solution for capturing the positions of all parties.

7. Revision of the main pending items

Document: AECS-03-14 (Chair - Secretary)
AECS-04-02 (J)
AECS-04-06 (OICA)
AECS-04-09 (TRL)

OICA presented AECS-04-06 as the OICA vision of the certification procedure for distinguishing the crash tests from the communication tests. The expert insisted on the need for an alternative procedure for capturing approval extensions and the different variants of a vehicle to avoid unnecessary additional full scale crash tests.
RUS was keen that the control environment be well described. The expert noted that it would be difficult to perform any other checks rather that communication test in a car deformed after the crash test to demonstrate operability of all components and connections but was open to evaluate the cases when something is not accessible in the tested vehicle. The expert also recalled that the RUS position is clearly what is written in the RUS rules.
OICA committed to present a more complete proposal for the next meeting
CLEPA was keen to limit the amount of tests.

TRL on behalf of the European Commission presented the document AECS-04-09
OICA had the following comments:

- UN R12 is a steering mechanism test, i.e. has nothing to do with airbag triggering.
- UN R94/95 are indeed severe tests. Fatalities decreased dramatically when these regulations were implemented.
- "D" option (slide 15): the regulation would be based on a "if fitted" requirement
- Study of accident data (slides 22 & 23): criteria for fatal, serious, slight accident?
- Logics in having to protect the equipment but not the occupants.
- CCIS ran up to 2010, representing usual scenario. Yet in D, the severity went down in the last years showing a descending slope in severity level. The expert stressed the need to take into account that positive trend. TRL was keen to have access to the D data.

RUS had concerns of displacing the vehicle after crash test because the AECS is not supposed to function during a long time after the impact.

The group was informed that a full overlap crash test regulation is almost ready for publication at UN level: expected 2nd reading in December, enforcement in 2016. The experts convened that this new regulation may not be important for the AECS informal group to date as there is no need to refer to two frontal impact regulations.
For the detection of the accident, D recalled that the levels of deceleration may vary according to the vehicle in the same test conditions. It was recommended to request expertise from the GRSP experts.
D deplored that the presentation questioned some items already answered. The delegate urged the group to start producing real text of the regulation.

J presented their comments and J position, in particular about the data transmission mechanism (AECS-04-02). J use "Packet data transmission". J had concerns that some provisions could not fit the 58 Agreement principles.
The informal group agreed that this could not be solved at this meeting of the informal group, rather need guidance from some parent group like GRSG or WP29.

7.1. Status of UN regulations

Background:

- UN regulations imply interoperability and require mutual recognition
- Approval tests can only simulate the reality, i.e. cannot capture all real world situations

Discussions:

The informal group should focus only on items independent from the infrastructure or external network.
The Secretary presented his proposal AECS-04-05 as an attempt to solve the problem of contradictory national requirements in the frame of the 58 Agreement. He recalled the discussions that were held at the 3rd meeting of the informal group, where the experts addressed that problem of the three different regions (i.e. J, EU and the Americas) having each different and sometimes not compatible mobile phone network frequencies. The group arrived at the 3rd meeting to the conclusion that the best approach would be to produce three different regulations such that mutual recognition would be ensured for each regulation within each region. The proposal AECS-04-05 was described as an attempt to capture into one unique regulation the provisions of the three different regulations. As the national authorities grant approvals to a type of vehicle rather than to a regulation, compliance to a certain class of Type Approval would be requested rather than compliance to a certain regulation.

OICA had the following reactions and comments:

- Check for GRSG reaction to the principle
- Need to add GNSS in the definitions of the types
- Notification to the Contracting Party about class of the type. NL was keen to have the possibility to refuse classes of Type Approval.

RUS supported OICA and proposed that GNSS communication should be added to the definitions of types. RUS fully supported the principle of the document AECS-04-05. The expert recalled document TRANS/WP29/343, where the Technical Services are indicated, with the Contracting Parties applying which regulation.
J pointed out that the frequencies may change frequently, making it necessary that the frequencies be closely monitored by GRSG. In addition, countries like ROK, Malaysia, and Thailand, when signing the regulation and having their own national frequencies, would make it necessary to create some new classes of Type Approval.
CLEPA was requested to provide a position for GRSG-106
The European Commission found it a realistic and practical approach subject to further confirmation.

Conclusion: Chair to present the approach of classes of Type Approvals to GRSG-106 as a request for guidance and feasibility

7.2. EMC, climate resistance and mechanical resistance

Document: AECS-04-08 (RUS)

Background:

- Question about simply referring to UN R10, or including all necessary requirements into the regulation
- not all UN R10 requirements are necessary for AECD/AECS
- similar background for climate and mechanical resistance

Discussions:
OICA still found non appropriate to introduce these provisions in the regulation. The expert recalled that e.g. an antitheft system failure provokes an additional immediate safety impact, while AECS would simply indicate a failure. The expert continued on saying that with regard to UN R13 comparison, ABS for example is under the responsibility of the manufacturer, why would AECS not be in that case? And ABS is only one example (AEBS, TPMS, traction control, airbag, etc. could be other examples).
RUS recalled that the device is relatively complex, and need to be safe. In addition, the expert recalled that there is nothing new in these requirements, as for UN R116. RUS was keen to find other examples of electronic, radio related and communication related systems where there are no such requirements.
J and CLEPA supported OICA and were keen to avoid overregulation.

OICA suggested to nationally use, for the AECS, the approach already in place in RUS for some provisions like e.g. resistance to extreme climate conditions.
D supported this point of view and was of the opinion that each Contracting Party should decide what to apply nationally.
NL understood the request from RUS, and found that AECS is different to the other systems, as it has to function AFTER a crash. For mechanical resistance, NL would support introducing full and detailed requirements. For climate resistance, NL was not supportive.
The European Commission did not find all this important.
The Chair proposed 2 possible ways out:

- requesting guidance to GRSG, or
- keeping the provisions nationally in RUS.

The Chair proposed that this item be discussed internally and referred to the situation existing in RUS with regard to UN R79/ GOST R 52302. RUS explained that UN R79 is only an addition to the RUS national regulation i.e. having an approval to UN R79 only permits to do less homologation work in RUS. RUS committed to present their position later in the meeting. RUS could agree nationally applying the provisions, or requesting guidance to GRSG for what regards mechanical and climatic resistance (EMC provisions could remain out of the regulation).
RUS committed to provide a clear position during this 4th meeting. The rest of the group was keen that no requirement be present in the regulation.
Italy supported Japan that this resistance to climate and mechanical influence would be overregulation.

RUS subsequently clarified their position:

- EMC: RUS can agree that a reference to UN R10 is added to the AECS regulation.
- Climate resistance and mechanical resistance: RUS committed to provide final position at next meeting.

There was a debate about the necessity to refer to a certain series of amendments to UN R10. Proposal: "…comply with the technical requirements of UN R10".

Conclusion:

- EMC: reference to UN R10, with no reference to the series of amendments. Reservation from the NL.
- Climate and mechanical resistance: Item to be re-discussed at next meeting, informal group to wait for final position from RUS.

7.3. Functional testing

Document: AECS-04-06 (OICA)
AECS-04-04e (EC)
AECS-04-03e (EC)
AECS-04-09 (TRL)

Background:

- Question on whether UN R94/95 are relevant for assessing AECD/AECS resistance to crash
  - Worst case configuration
  - AECD/AECS post-crash functionality assessment
- Proposal to perform a separate AECD sled test

Status of discussions after 3rd GRSG-AECS informal group meeting:

- Verification (in minimum) of
  - generation of trigger signal during the UN R94/95 impacts,
  - audio capabilities and MSD transmission during crash test procedure.
- This could also be done via other measures (item to be further discussed)

Discussions:
TRL presented document AECS-04-09
OICA firstly requested time to form a position. In addition, the expert from OICA stressed the need to assess the possibility of performing a sled test as an alternative to the UN R94/95 tests, e.g. for the different variants of one vehicle type. The expert was keen that a change of one little Ecall system component (e.g. loudspeaker) should not imply a new UN R94/95 crash test. D was of the opinion that there is no need for a new crash test if only the loudspeaker "model" is changed. OICA pointed out that this could be part of the type definition.
RUS was keen that vehicles that undergo crash test should be included in the regulation scope.
Italy stressed that the specifications of the test call should be well defined.
NL suggested focusing on the component.

The experts then tried to improve the table as follows (see next page):

	A	B	C	D	E	F
1	Scope	All M1 and N1				
2	Type of triggering	Automatic and manual			Manual? Auto and manual? No AECS?	Manual? No AECS (exempted)?
3	Testing automatic triggering	Included in scope of R94 only – test in R94 M1<2,5t and R>700mm	Included in scope of R95 only – test in R95 M1>2,5t and R<700mm N1R<700mm	Included in scope of R94 and R95 – test in R94 and R95 M1<2,5t and R<700mm	Not in scopes of R94/95 and with trigger mechanism – provide documentation M1>2,5t and R>700mm N1 R > 700mm	Not in scopes of R94/95 and without trigger mechanism - no demonstration M1>2,5t and R>700mm N1 R > 700mm
4	Testing crash resistance	– Vehicle: (Parts II and III) after R94 «functional test», see below ; – Device (Part I): after sled test: see below	– Vehicle: (Parts II and III) after R95 «functional test», see below ; – Device (Part I): after sled test: see below	– Vehicle: (Parts II and III) after R94 and R95 «functional test», see below ; – Device (Part I): after sled test: see below	Device (Part I): after sled test: see below	Exempted
5	Assessment after full-scale crash test	Demonstrate: Triggering occurred, test call can be established, subjective audio check, and successful MSD transmission				
6	Assessment after component test	Demonstrate: test call can be established, subjective audio check, and successful MSD transmission				
7	Assessment of manual triggering	Demonstrate: Triggering occurred, test call can be established, subjective audio check, and successful MSD transmission				

Notes and comments:

- Line 1:
  - OICA reserved their position about scope. OICA proposed that the definitions of the vehicles in scope be discussed at GRSP as well.. Depending of the definition e.g. “crash detection sensor”, some technology could become mandatory, and Industry wanted to avoid that.
  - RUS informed that their position depends on the decision of the group with regard to wide vs. restricted scope. The Secretary explained that UN system usually goes in the direction of a wide scope since it permits the Contracting Parties to nationally narrow the scope. A narrow scope does not permit the Contracting Parties to enlarge it for the sake of mutual recognition. RUS and European Commission could support a wide scope.
  - J committed to provide a position at 5th meeting
  - D could support M1/N1 but the experts clarified that it depends also on the meaning of “crash detection system”. TRL clarified this wording as pretty equivalent to airbag presence. D could support a scope covering all M1/N1
  - NL could support M1/N1
  - Italy could support all M1/N1 subject to confirmation at next meeting.

- Line 2:
  - RUS could support that some M1/N1 have manual triggering only
  - NL wanted that "manual only" be permitted only at national level. The expert feared that manual Ecall would increase the number of false Ecalls to PSAP.
  - OICA could support RUS
  - D had no position and reminded that point 5 of Terms of Reference address M1/N1. The expert hence proposed to address the manual triggering in a later stage, i.e. covering the "manual only" at a later stage.
  - The European Commission found the broad scope a good achievement, and would favour no provisions for "manual only" in the regulation.
  - OICA, NL and D supported that only the vehicles equipped with AECS both manually and automatically triggered are included in the scope of the regulation.
  - RUS pointed out that "manual only" vehicles are in the scope of the RUS Federation regulations.
- Line 3: RUS could accept temporarily the 3 first lines.
- Cell E2:
  - Manual only: There is currently no means to demonstrate triggering mechanism
  - Auto and manual triggering: European Commission keen to further discuss as believes demonstration is possible
  - No AECS: logical option
- Cell E3: Vehicles covered by UN R12 but not UN R94/95 should be handled the same way as those not in scope of UN R94/95 (i.e. small N1 vs. large SUVs)
- Cell F2: NL is not supportive of AECS triggered only manually. They should be out of the regulation.
- Cell F3: demonstration performed at device Type Approval
- Cell D4: Why would these vehicles have to be tested more than the others? need for further discussion

The experts then committed to clarify the main objectives and definitions for each cell:

- Objective of the full scale test is to check whether the system survives a vehicle deformation during an impact test.
- Objective of the component test is to check resistance to a deceleration of [75] g via a sled test,
- Definition of device: all components (e.g. loudspeakers, wires etc.) + separate ecall device
- Definition of the system: all components, (e.g. loudspeakers, wires etc.), ecall device is integrated in the vehicle architecture.

Conclusions:

- Table reflects status of the discussions at AECS-04
- Each cell to be further reviewed at next meeting because position of each party must be confirmed at next meeting
- all parties committed to confirm their position at next meeting
- Each test to be described in details at future meetings.

7.4. Navigation module requirements

Document: AECS-04-12 (GSA)

Background:

- Question on whether the regulation should mandate GNSS for achieving accuracy in positioning (design restriction vs. technical necessity)
- European Commission was keen at AECS-03 that all AECD/AECS are Galileo compatible

Status of discussions at AECS-03: general requirements with no technology, and approval tests imposing GNSS.

Discussions:
The GNSS Agency of the EU presented document AECS-04-12.

OICA had the following remarks:

- Basic: finding harmonized provisions for vehicles. There are GNSS and other ways to position a vehicle. The UNECE platform is performance based.
- Galileo is currently not perfect (unavailability today, building place) and this is why there is a need for 2 GNSS. The vehicle manufacturers are not expected to compensate for a non-perfect navigation system.
- The decision of using one or another GNSS or positioning system is up to the manufacturer. The regulation cannot focus on one particular positioning system

CLEPA emphasized OICA position. The expert stated that the regulation should be performance based, not system specific. CLEPA supported a text having no reference to Glonass, Galileo or whatever and was keen that the regulation does not mention specific technologies.
RUS understood the Industry position but found it not practical because there is today no other technology available for a correct positioning. RUS supported the idea of using multiple GNSS. Yet, the way to reflect this in the regulation is still to be discussed. The expert from RUS stressed that even if the regulation had no reference to the GNSS in the general requirements, it would need to reference to GNSS in the test method.
OICA questioned the concept of multiple constellation:

- Why is there any need for three and not two constellations?
- What if other Contracting Parties add their own constellation?
- The performance is to be reached by the manufacturer

The European Commission distinguished two issues:

- Inconsistencies in proposing mobile phone networks (technology related), but willing to be GNSS neutral. OICA stressed that the technology is different, the frequencies cannot cover all regions
- The UN regulation should provide method for proving the compatibility to the different GNSS rather than letting that free.

OICA found that techniques should not be promoted by the regulations, rather performances. One expert from OICA proposed to let the test method at the choice of the manufacturer because the important is the accuracy of the positioning.
J supported the OICA position and recalled that the UN regulations must be technology neutral. GNSS is not always available in certain locations (cities), and other systems are necessary. CLEPA stressed the situation of a tunnel.
The representative of the EU GNSS Agency stated the following:

- GNSS are global, not regional.
- Multiple GNSS: combination permits a better positioning, permitting to overcome limitations intrinsic to systems.
- She recalled that the Contracting Parties have no need to "sell" the technology

OICA pointed out that the group faces for the 1st time a regulation with shared responsibility (vehicle, networks, PSAP). The expert insisted that the 58 Agreement well specifies what is covered: performance requirements that are proved through test methods. The expert recalled Article 1 of the 58 Agreement, to read (text underlined by the Secretary):

> *"The Regulation shall cover the following:*
> *(a)Wheeled vehicles, equipment or parts concerned;*
> *(b)<u>Technical requirements</u>, which if necessary may include alternatives;*
> *(c)<u>Test methods by which any performance requirements are to be demonstrated</u>;*
> *(d)Conditions for granting type approval and their reciprocal recognition including any approval markings and conditions for ensuring conformity of production."*

F had sympathy with the OICA position on performance based requirements, but found this unrealistic under political point of view. The expert from F stated that in EU, man could not accept a system completely independent to Galileo.
The Chair supported the expert from France, and agreed that WP29 sometimes experiences political decisions. He proposed that the final decision be taken by the Contracting Parties at GRSG or WP29 level.
NL supported the European Commission position.

The European Commission stressed that there is currently no proposal for a test method not related to GNSS technology.
RUS supported the concept of multiple GNSS requirements. RUS stressed that it would be difficult to define a technology-independent test method as it would imply testing positioning in various locations throughout the world.

The European Commission presented AECS-04-04 as a summary of the presentation

Conclusion:
- Chair to request guidance to GRSG about the reference to multiple GNSS.
- Discussions to resume at next meeting.

8. Informal group timeline

Document: AECS-01-01-r1(Chair and Secretariat)

The Chair proposed to discuss the informal group timeline and suggested to envisage a possible postponement on the target date to 2015. He informed that there is a need for 7-8 months for the Russian Custom Union to implement a UN regulation nationally such that even in the perfect situation, it would be too late.
D was of the opinion that the target should be put backward to 2015 October session of GRSG. The delegate pointed out the necessity to also address the other categories.
RUS did not believe that N2, N3, M2, M3 were a problem as the real issue is the M1/N1. RUS shared the postponement of the target date to October 2015.
NL and J supported October 2015 as a target date
Italy found realistic to postpone the current target date, was of the opinion that a fixed date is necessary to avoid endless discussions.
The European Commission was keen to finish the work ASAP, and found that a realistic date is necessary. The expert was of the opinion that a date earlier than October 2015 would be too ambitious.
OICA found it important that the regulation is well written, and agreed that there is a need for more time. The expert questioned whether the time pressure due to the Russian target was still there.
CLEPA supported the OICA position, and found October 2014 a bit ambitious.

Conclusion timeline: Chair to request GRSG to postpone mandate to October 2015, for a text focusing on M1/N1. The second step would be completed at a date later than October 2015

Guidance request to GRSG:
PPT presentation AECS-04-07 from the Chair.
The experts reviewed document AECS-04-07 and the Chair committed to prepare an additional slide for explanation of the principle of classes of approvals.
The final document was tabled at GRSG-106 as GRSG-106-31.

Note of the Secretariat:
Document GRSG-106-31 was welcomed at GRSG-106 and the experts committed to provide guidance at the next session.

9. List of action items for next meeting

RUS requested that the European Commission present the state of play of the EU legislation on AECS at the next meeting of the informal group. It was agreed to add this item to the draft agenda of the next meeting.

10. Outcomes of GRSG-106

Extension of the informal group mandate:

- GRSG-106 supported the improvement of the draft Terms of Reference per document GRSG-106-03.
- The request for mandate extension by one year i.e. informal group to provide input at the 109th session of GRSG scheduled for October 2015, was supported as well by GRSG-106. The Terms of Reference will then read as follows:

  5. *"The group shall focus on in-board systems for vehicles in categories M_1 and N_1. ~~Vehicles of categories N2, N3, M2, and M3 may be covered in a later stage.~~*

  6. *The target completion date for the work of the informal group shall be the ~~107th~~ **109th** session of GRSG in October ~~2014~~ **2015. Vehicles of categories N_2, N_3, M_2, and M_3 may be covered in a later stage.**"*

- Requests for guidance (document GRSG-106-31):
  - Mobile phone communication: NL supported the solution proposed by the informal group. GRSG committed to provide guidance at its next session (October 2014)
  - Data transmission: D pointed that it is crucial for the informal group to get guidance on this item. J could not support prescribing the communication protocols in a UN regulation because the regulation should be performance relevant. PL proposed to use satellite telephone. RUS noted that satellite telephone technology is not compatible with in-band data transmission and said that the informal group has to focus on existing technology (mobile phone networks). D explained that the group faces two possibilities: expensive combination or classes of Type Approvals. D could support the quadband technology as a fast track.
  - GNSS: PL said that some navigation systems are not compatible together. The Secretary of the AECS informal group explained the dilemma that the informal group is facing i.e. producing a technology neutral regulation with no mention of technologies that are obvious and necessary for global positioning vs. mentioning the GNSS technologies and then betraying the 58 Agreement principle of performance oriented regulations. J supported a technology neutral approach.
  - For all items, GRSG guidance is needed.

11. Schedule for further IG meetings

1-3 June in Prague, under invitation from the European GNSS Agency (please see the note below)
1-4 September in Torino, invited by Italy

Note of the Secretariat:
OICA subsequently requested to cancel the meeting of June 2014 per the following argumentation:

"The prolongation of the informal group mandate was discussed at the end of the meeting, the day after the group discussed the schedule of future meetings (AECS-05 on 1-3 July in Prague and

1ECS-06 on 2-4 September in Turin). As a consequence, the experts realized at the very end of the meeting that the time pressure is somewhat decreased for the informal group.

Because of this time pressure release, OICA finds the July meeting a bit premature. Industry indeed needs in-depth preparation and technical consultation within each company ahead of each meeting, in order to provide relevant and consistent input to the group.

This is why OICA believes that it may be opportune for the group to postpone the Prague (July) meeting to a later date. This would in addition also give time for the Contracting Parties and others to best formulate their positions for the September (Turin) meeting."

Subject to final decision about the dates of the next meetings, it may happen that the July meeting is cancelled and that the 6th meeting takes place in Prague (CZ) on 18-20 November 2014.