

ECALL AND 2G/3G NETWORK OBSOLESCENCE

Since May 2018, the European Ecall legislation requires that all vehicles be equipped with an emergency call system – initially on new homologations, then on all vehicles.

This system is based on 2G and 3G network technology. A new Ecall regulation based on 4G, 5G IP protocol (new generation – NG) should be published in 2022 with an application date from 2024 or 2025.

Telecom operators have started to progressively plan the shutdown of their 2G and 3G networks in the world to switch to liberate frequency bands for more efficient 4G and 5G networks.

There is therefore a high risk that Ecall coverage will degrade in the short term and then disappear progressively in the medium term (2030?) – however there will still be millions of vehicles on the roads in Europe equipped with this technology.

Several scenarios are envisaged to ensure the continuity of services, which is a responsibility of the Member States of the EU:

- Extend the lifecycle of 2G or 3G network until the number of compatible vehicles on the road is sufficiently low (2035?)
- Supply an after-market solution for existing vehicles with a 4G box ensuring new generation Ecall services

In this context, the position of the automotive sector is:

- Automotive OEMs cannot take responsibility to propose add-on NG Ecall solutions
- The after-market network of the sector can carry out this replacement, conditional on financial compensation and a clear re-homologation process. One of the key stakes would be to ensure that customers comply with such an after-market campaign. Questions of cost responsibility and safety need to be treated to enable this compliance.
- Concerning vehicles produced with a 4G modem, but respecting the 2018 ecall protocol, a retrofit cannot be guaranteed by an OTA update.
- The automotive sector will offer vehicles compatible with the NG ecall text 3 years after its publication.
- The first priority concerns the publication date of the study promised by the EC in Novembre 2021 and delayed until June 2022, as well as the publication date of the new Ecall legislation. The later this is known, the higher the number of vehicles in use in the EU with the old Ecall version. Today 20 million vehicles are concerned, by 2030 this could be 50 million.
- For the telecom industry, more clarity is required concerning the lifecycle of the 2G/3G networks. We understand that they will be maintained until at least 2025, but not after 2035. The period between 2026 and 2035 needs to be clarified.
- Finally, the question not only concerns automobiles – other equipment uses the 2G/3G network, e.g. medical monitoring equipment for home-based patients. Numerous sectors are concerned and they cannot carry the cost of an anticipated or poorly-managed obsolescence of 2G/3G technology.

European law does not appear to impose the obligation to maintain an emergency call service

- There is no obligation in the law to maintain a minimum telephone service (emergency call)
- Directive 2002/22/EC 'Universal service directive' annexe 1 relative to Article 10.
- Nevertheless, car manufacturers cannot be held responsible for problems linked to the disappearance or malfunction of any systems other than their own, and in particular problems linked to cellular network (e.g. closure of 2G-3G networks)

Note that the telecom operators are within their rights to use the licensed frequencies as they wish.

Automobile manufacturers cannot accept financial obligations linked to the possible disappearance of the communication system which is imposed for the Ecall service (linked to the closure of the 2G and 3G networks after 2025 or 2030)

- Car manufacturers respected their obligations to integrate ECall in conformity with the European directive and the Ecall standard.
- The decisions to shut down the 2G/3G networks is not their responsibility.

Automobile manufacturers cannot be involved with add-on Ecall solutions and their responsibility cannot be implied to justify the update costs

Automobile manufacturers are not concerned by aftermarket solutions (smartphone, aftermarket telematics units, aftermarket dedicated Ecall systems, etc.) and cannot commit their financial responsibility. Aftermarket solutions do not respect homologation criteria.

At this time, aftermarket solutions are not considered being at the same safety level as telematics which are integrated into the vehicle (eCall certification).

The current version of the eCall standard is not conceived to be integrated in smartphone-based systems and this option cannot be considered as a workaround for vehicles which have a non-functional eCall. One important topic is to avoid false positives.

NG Ecall 2022

Over the past few years, many OEMs have started to sell vehicles equipped with a 4G Modem which is compatible with 2G and 3G eCall networks. The New Generation eCall regulation based on IP protocol applicable to 4G, 5G,... networks should be published in 2022 with an application date from 2024 according to the different vehicle types.

- Will these vehicles be compatible with NG 2022 eCall ? It remains to be demonstrated that all the 4G modems integrated into the telematic systems can be updated to NG eCall by an Over-The-Air update.
- Manufacturers request 3 years after the new regulation publication (NG eCall) to start selling the first NG-eCall vehicles.

What is the technical feasibility to update 4G modems Over The Air?

Several issues are identified by this approach:

- VoLTE support for 4G modems
- Memory size (IMS stack?)
- Implementation of telematic audio content which has to respect NG-Ecall specifications
- Simultaneous support of Ecall and NG-Ecall to manage the transition between the two systems
- Homologation without tests (SW evolution with no incidence on the triggering strategy/frequency certification)
- Cost for the development and implementation of the system

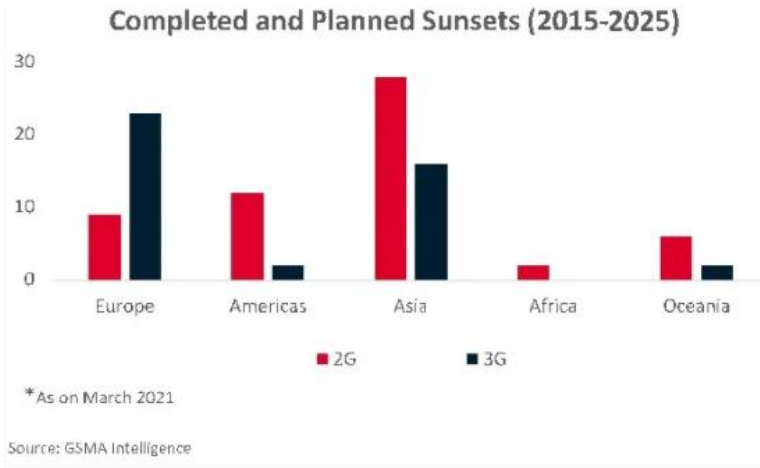
PFA position:

- Vehicle manufacturers are not involved in the development of aftermarket solutions.
- Nevertheless, these solutions could be a compromise between ensuring continuity of service and upfront cost; this would be dependent on defining the replacement protocol, the homologation conditions, the financing of this replacement and identify who would be responsible of such an exercise.
- Concerning vehicles produced with a 4G modem but respecting the 2018 Ecall protocol, the retrofit via OTA is not feasible because the firmware of the modem is impacted, and for safety reasons, a hardware operation is necessary for updates.

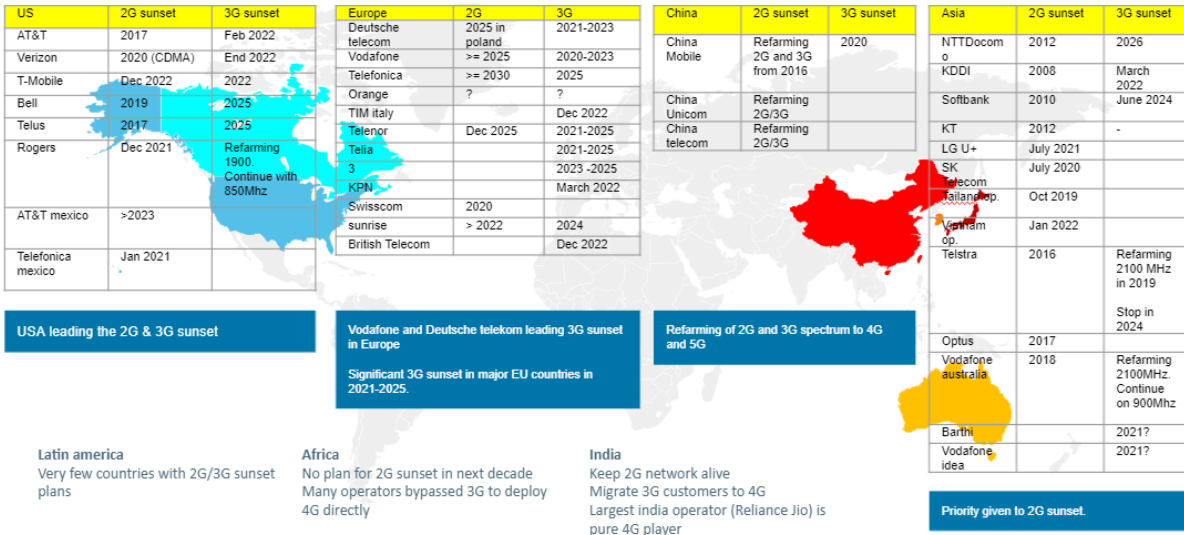
ANNEXES

Annexe I – Shutdown of 2G/3G networks

Travail en cours Valeo/Stellantis a la 5GAA sur la fermeture des réseaux 2G/3G

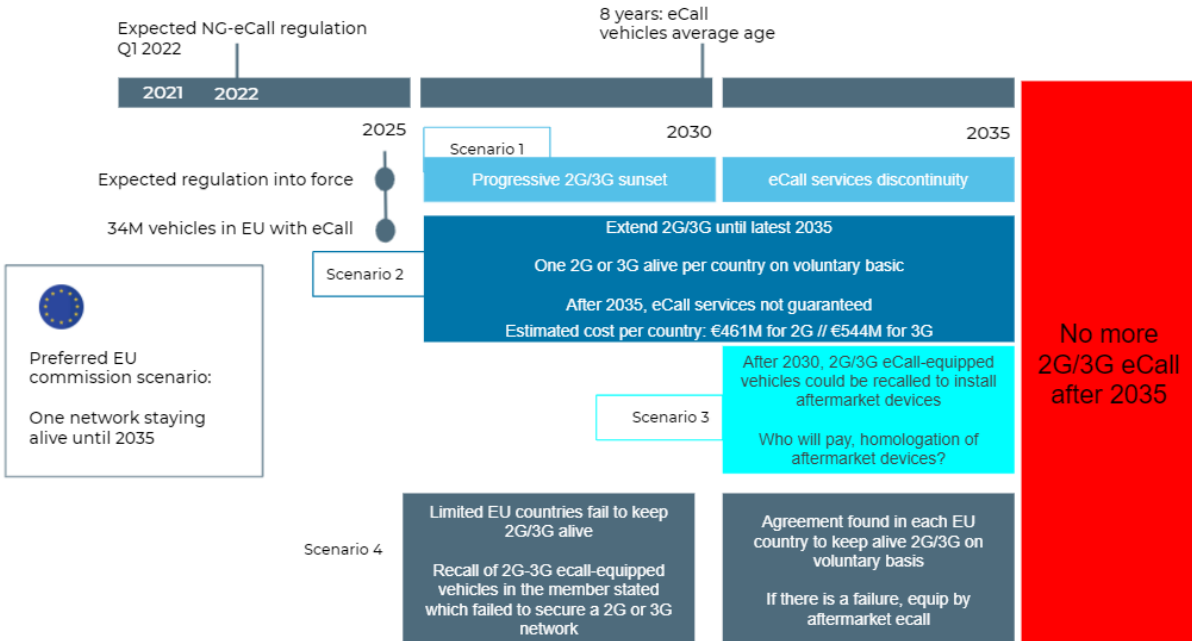


2G/3G sunset announced by telecom operators



Annexe II - Scenarios envisaged by the European Commission for eCall

Transition eCall -> NG eCall



Annexe III – Information from ACEA/CLEPA

ECALL –TERMINOLOGY

Retrofit and Aftermarket differences



Retrofit solutions:

Devices designed for a specific vehicle model or a group of vehicle models and with the sole purpose to replace/update an already factory fitted and type approved eCall module. As is generally the case, retrofitted parts would have an OEM number and are under the responsibility of the OEM. The OEM is responsible that all the (retro)fitted systems are complying with given standards and are correctly installed inside the vehicle.

Aftermarket solutions:

Aftermarket eCall systems are fully independent from the OEM and are manufactured and distributed by 3rd parties not related to OEM's. The functionality eCall might be offered as stand-alone eCall solution or with additional functionality and either been connected to the vehicle electronic architecture (OBD port) or operate independently (connected to the power plug). Aftermarket solutions are primarily designed for vehicles without mandatory eCall functionality to ensure a certain level of additional safety. Within project **SAFE – Aftermarket eCall for Europe** standards and specifications as TS regulation are expected by 2. Half of 2021 with adoption by CEN WG15 earliest Q1.2022. The project covers 6 different type of devices from cigar lighter solutions to Communication Control Unit (CCU) solutions.

Conclusion: currently, no solution available to meet the regulatory requirements.

ECALL – ADDRESSING LEGACY SYSTEMS

Use of automotive aftermarket devices and time-line (CLEPA)

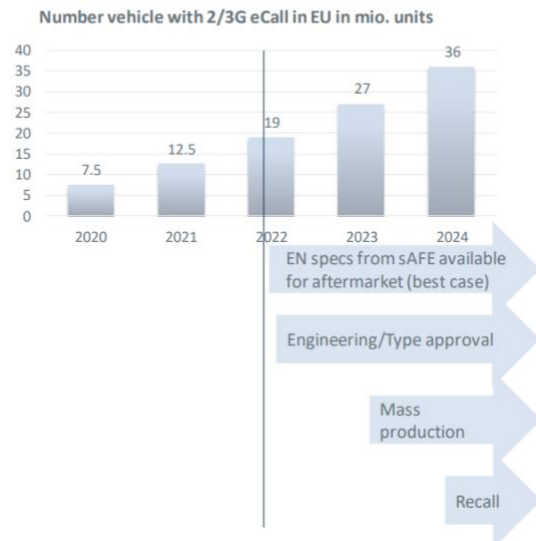


Penetration of 2/3G eCall systems:

- Feb 2021 approx. 8.4 mio vehicles were equipped with 2/3G eCall, this will increase by End of 2021 to about 12.5 mio vehicles.
- Few VMs offer additional to 2/3G also 4G connectivity for selected vehicle models.

Technical solution and status of regulation:

- Even current vehicles having 2G/3G with 4G modules: 4G modules cannot simple be updated to reroute through 4G. Current eCall regulations do not allow retrofit. For retrofit solutions compliant to existing regulation require the new development of devices incl. crash-tests or alternative specifications for type approval.
- Adopted EN specification for Aftermarket solutions earliest available from Q2.2022.



ECALL – ADDRESSING LEGACY SYSTEMS

CLEPA estimated cost for an aftermarket device

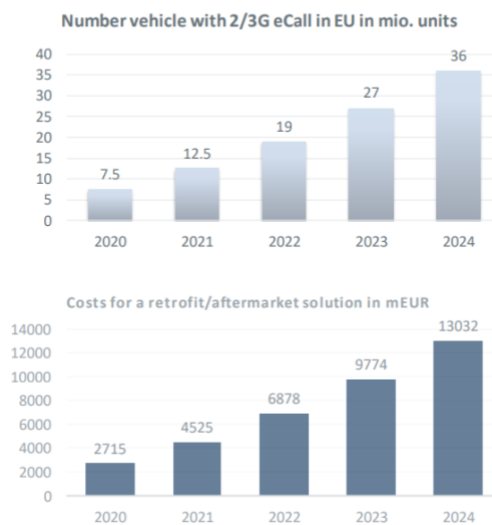


Method:

Recall and installation of a device allowing LTE and 4/5G communication to a PSAP (voice and MSD). 2 types of devices needed:

- CCU with connection to the OBD to make use of vehicle sensor, audio, antenna and navigation information.
- Standalone device with all sensors and functions in case OBD plug is not accessible.
- Installation in workshops within 30 – 60 min

Cost (Device + Installation)	EUR
Hardware CCU (housing, circuit board, plug, harness, antenna ..)	120,-
License SEP at FRAND (communication standard) 3 – 10 EUR	5,-
Installation 45 min à 140 EUR per hour	105,-
Set up VIN and device activation 10 - 15 min	30,-
Handling cost recall (letter, appointment, ...)	30,-
Profit margin 5%	14,-
VAT 19%	58,00
Total cost per case	362,-



ECALL – ADDRESSING LEGACY SYSTEMS

Conclusion and other considerations



- Development of systems meeting EN specifications can only start earliest Q2.2022 followed by type approvals and mass production
- **PSAPs** to be part of the equation and impact analysis
- Simple software updates to allow 2G/3G modules to communicate via 4G not possible
- Hardware updates require recalls and recertification/type approval. A recall campaign could start earliest 2024 what would include at least 25 mio. vehicles
- Cost for device and installation are seriously > 10 bn EUR, not included impact of opportunity costs and costs for:
 - Engineering cost for devices
 - Type approval and crash tests
 - Training of service staff at approx. 60.000 installers in EU (material, hotline, tools, instructions, practical training, ...)
 - Logistics
 - Many other elements: please refer to the joint ACEA/CLEPA guidance document of April 12th, 2021

ECALL – ADDRESSING LEGACY SYSTEMS

Conclusion and other considerations



Other implications:

- Engineering and testing resources needed for CAD and powertrain shift
- Liability, warranty, customer explanation and guidance
- Recall/resistance at consumer level to install an additional device
- Limited willingness to pay at consumer level
- High administrative burden to contact and convince consumers

Explanatory guidance on how, who and what in eCall: please refer to our ACEA/CLEPA guidance document of 12/04/2021

ACEA/CLEPA

Brussels, 30 April 2021

Discussion ACEA/CLEPA et ETNO

Juin 2021

- Critical issues raised by ACEA
 - New types of vehicles should be equipped with NG eCall by a certain date (~beginning 2025 at the latest), keeping in mind the usual timelines (3 years) for the development and integration of solutions in vehicles, as well as the type approval process
 - As this would be applicable only to new types of vehicles, existing types currently equipped with 2G/3G eCall will need to be considered separately, considering that aftermarket solutions do not guarantee the same levels of security and safety as the regulated e-call and that these vehicles will have to maintain the existing functionality up and running (similar to the approach from the GSR)
 - Recall is not the correct wording, rather use: 'scheme for vehicle owners to install an aftermarket device'
 - A clear explanation of what aftermarket solution means should be added. Proposal made: 'Aftermarket solution means an eCall after market device that is not developed nor installed by the vehicle OEM and that is not covered by the vehicle type approval obtained by the vehicle OEM'
 - Memorandum should ideally set out a path for NG eCall knowing that lead times, interoperability and continuity are key parameters

- Critical issues raised by MNOs
 - Baseline assumption of all scenarios is not accurate: No commitment has been voiced by MNOs to voluntarily maintain one CS network in each MS until 2025/2030, nor are there any guarantees that competent authorities (NRAs, Ministries in charge) will support this approach or offer adequate compensation
 - Decision to sunset 2G and 3G networks is taken by operators, and there can be no guarantee that at least one network will be maintained until a given date
 - Maintaining one Circuit Switched network per MS beyond the moment where economic actors would decide to shut down their networks, would need to be based on a voluntary approach, with the modalities and potential compensation to be discussed at national level
 - Should this extension be imposed to the telecom sector, this would infringe the contractual terms of the licenses that have been awarded to MNOs, and thus would open the door to compensation demands from the telecom sectors

- ETNO presented cost calculations, representing an amount of 3.5 b€ for keeping one 2G network per EU Member State during 10 years, corresponding to 2.1 b€ of costs for keeping 2G and 1.4 b€ of (lost) opportunity costs + update on development of VoLTE roaming in the EU, on technical information on the transition from 4G to 5G

Annexe IV – Letter on EATA sent to the European Commission on Ecall



Brussels, 5 November 2021

Mr. Henrik HOLOLEI

Director General, DG MOVE, European Commission

Ms. Kerstin JORNA

Director General, DG GROW, European Commission

Mr. Roberto VIOLA

Director General, DG CONNECT, European Commission

CC: Mr. Herald RUIJTERS, Mr. Joachim NUNES DE ALMEIDA, Ms. Rita WEZENBEEK

Re: eCall Regulation

Dear Directors General,

We are writing to you on behalf of the European Automotive and Telecommunications Alliance (EATA), representing the interests of the European telecommunications and automotive sectors. Our alliance was established in 2014 on the initiative of Commissioner Oettinger as a forum for exchange and cooperation on matters related to the development and deployment of Cooperative, Connected and Automated Mobility (CCAM) in the European Union.

Over the course of the past two years, our associations have held extensive dialogues with the responsible services in the European Commission on the issue of eCall, specifically with regard to updating Regulation (EU) 2015/758, and finding a solution to the legacy issue, whereby an ever

increasing number of newly produced vehicles are equipped – as mandated by the Regulation – with circuit-switched technology which is **only** compatible with 2G and 3G networks. This is done in a context where 2G and 3G networks in Europe are beginning to be closed down, in favour of re-farming spectrum resources and rolling out next generation mobile connectivity, notably 4G and 5G.

We are writing to express our **serious concern** that this urgent issue continues to face considerable and undue delay. Many months of discussion, supported by numerous rounds of input, have not yielded any possible way forward on this important issue, which has had the effect of delaying further the adoption of a legislative proposal aimed at updating the eCall Regulation.

The supporting study commissioned by the European Commission, with the objective of informing the update of the eCall Regulation, should constitute a full evaluation of the eCall Regulation to-date, in accordance with the Commission's Better Regulation Guidelines. This assessment should in particular evaluate the eCall Regulation for its effectiveness, efficiency, relevance to current needs, coherence with other EU policies, and judge the Regulation to have achieved EU added value.

The supporting study should, in addition, be conducted as a forward-looking impact assessment – not only for the issue of updating the legislation to enable the use of (technologically neutral, allowing market evolution) packet-switched eCall modules, but also an assessment of the impact of any decision to address the legacy issue. This should include a full assessment of the costs involved, including the opportunity costs.

We reiterate the urgency of this issue, and call upon the relevant services of the Commission to work expeditiously to address the problems surrounding the eCall Regulation. We also urge the Commission to ensure that the above issues are taken into account in the scope of the supporting study. Our associations remain at the disposal of the Commission to exchange on the way forward, and we look forward to continued constructive dialogue.

Yours sincerely,

Sigrid de Vries

Chair, EATA
Secretary-General, CLEPA

Daniel Pataki

Vice-Chair, EATA
Vice-President Policy and
Regulation, GSMA

Eric-Mark Huitema

Director-General, ACEA

Lise Fuhr

Director-General, ETNO

Luc Hindryckx

Director-General, ECTA

Joe Barrett

President, GSA