sAFE

Aftermarket eCall for Europe

eCall Association initiative: Get together on open eCall challenges – Workshop III

15 December 2020, 09:00 CET

Hosted by Steve Schneider

Agenda

09:00 – 09:05	**Welcome Coffee**
09:05 – 09:15	Welcome note by Steve Schneider and Yury Grin
09:15 – 09:45	Keynote by Freddie McBride
09:45 – 10:30	Discussion on open eCall challenges Round I
10:30 – 10:40	Coffee break
10:40 – 11:40	Discussion on open eCall challenges Round II
11:40 – 12:00	Further steps
12:00	End

sAFE – eCall Association initiative | Get together

eCall Association

Steve Schneider – ITS mobility

Dissemination activities – sAFE

Get together, 15 December 2020

What has happened so far?

Q1/2020

Q2/2020

Q3/2020

Workshop I on 30th January

Acceptance, possible aims, tasks and structures of a potential eCall Association

Workshop II on 5th May

Vision, road map, organisational structure and the terms of references of the potential eCall

Call for LoI

Call for expressions of interest to launch a joint process to finalise key documents.

eCall Days on 14th + 15th October

Discussion on current eCall challenges and further development.

To develop an all-inclusive association to enhance the cooperation between the stakeholder groups involved in emergency call (eCall) globally with the aim of increasing **road safety** and reaching **Vision Zero** by improving the eCall functionality.

1. To establish an eCall association that represents all stakeholders in the eCall technology.

2. **To highlight good practice across all facets of eCall.**

3. **To identify and provide viewpoints or solutions on risks or issues whether political strategic, operational or technical that impact on the effective operation of eCall as a technology.**

4. To maintain a support function to all members of the eCall association, that will include an impartial Secretary General to support all activities of the eCall association.

Further Challenges

- Urgent technical tasks waiting to be completed

17-digit number dial to IVS	Data transmission between actors
False calls from IVS	Unified method of testing for OEM
NG 112 eCall	Last two known locations supplied
2G/3G Sunset	

- Further PSAP related problems

Call-Back issues/challenges	Wrong data in the MSD
TPS integration	Access to EUCARIS

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Outcome of this workshop

- Provide a consistent overview of the listed open eCall challenges

- Setting up international joint expert groups on one or more of the topics listed before

- Coordinate further actions together

Cooperation with ERA Glonass

Yury Grin – AO Glonass

Get together, 15 December 2020

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About CEPT/ECC/ECO

European Conference of Postal and Telecommunications Administrations

– 48 European countries cooperating to regulate posts, radio spectrum and communications networks

- Established 1959
- Ministries and Regulators from 48 European Countries (Incl. EU 27)
- CEPT consists of three autonomous business committees
- Radio Spectrum, Numbering and technical regulatory issues
- Representing the European Region at UN level - ITU and UPU
- Administrative and expert support from the European Communications Office (ECO) – Based in Copenhagen, Denmark

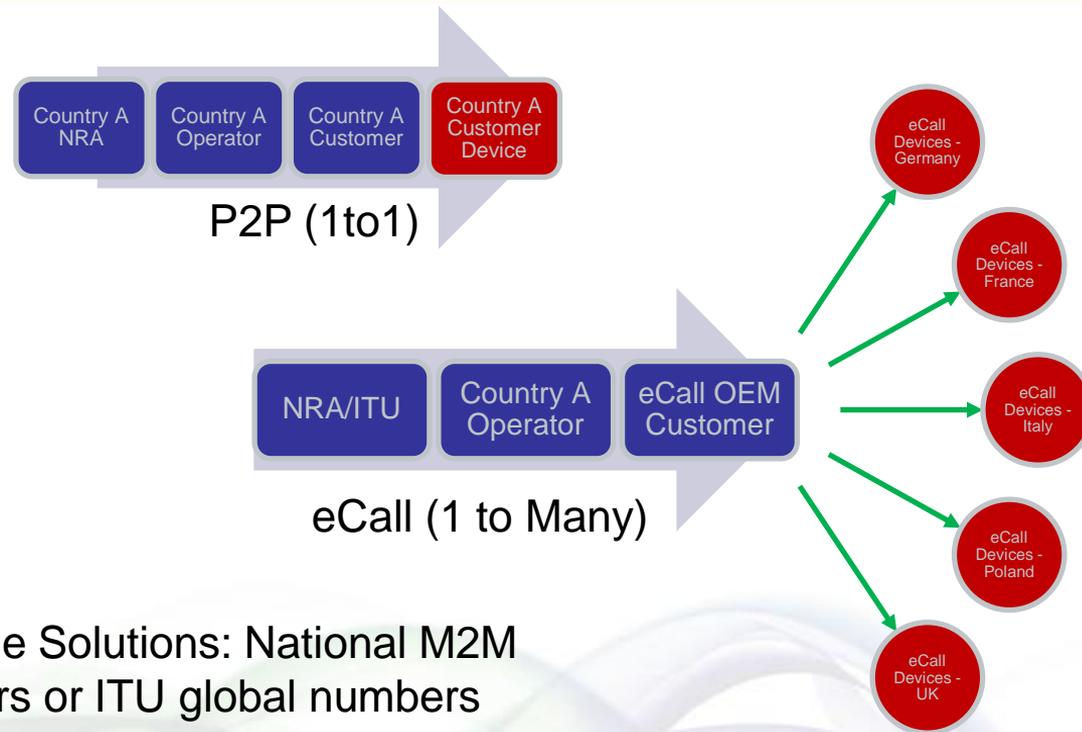CEPT **ECC**
Electronic Communications Committee

Com-ITU

CERP

- Started in late 2012 - Main objective was to bring attention of eCall stakeholders to issues related to numbering for eCall
- Raise awareness of issues at external events – HeERO Conference, EENA Conferences and workshops, ERTICO workshops etc.
- Participated in EeIP Life Cycle Management group and contributed to LCM report.
- Held a stakeholder workshop on numbering for eCall in January 2017
- Published ECC Recommendation (17)04 on numbering for eCall
- Objective of this Recommendation was not to promote or prohibit any particular numbering solution but rather to communicate the consequences of any chosen solution
- (17)04 amendment due for adoption this week and ECC Report on eCall Call-back under way

How P2P and M2M/eCall devices are numbered

Country A NRA → **Country A Operator** → **Country A Customer** → **Country A Customer Device**

P2P (1to1)

NRA/ITU → **Country A Operator** → **eCall OEM Customer**

eCall (1 to Many)

eCall Devices - Germany
eCall Devices - France
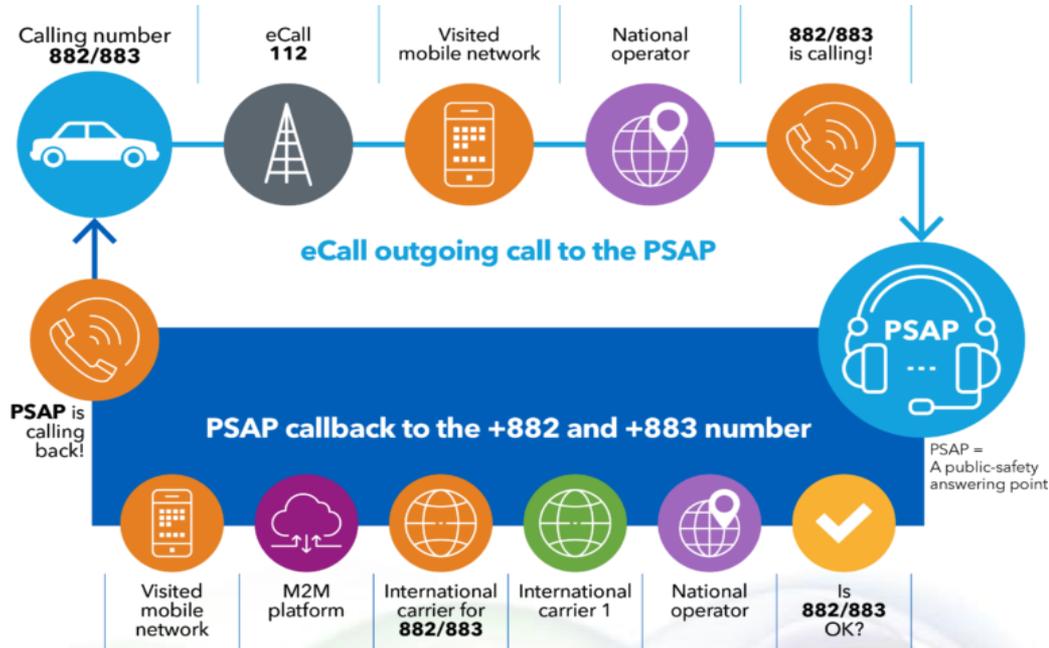eCall Devices - Italy
eCall Devices - Poland
eCall Devices - UK

Possible Solutions: National M2M numbers or ITU global numbers

3 proven issues with eCall call-back and longer numbers

1. Numbers not provisioned on fixed-line networks (and possibly transit networks). Therefore outbound call fails

2. Enterprise communications solutions (i.e. PBX systems) not configured to handle longer numbers – typically between 12 and 15 digits (17 digits when you add the "00" international dialling code). These could be ITU numbers or national numbering ranges dedicated for M2M/IoT

3. Cost of calling ITU numbering ranges

Actors involved in an eCall and eCall call-back

Calling number
882/883

eCall
112

Visited
mobile network

National
operator

882/883
is calling!

eCall outgoing call to the PSAP

PSAP is
calling
back!

PSAP callback to the +882 and +883 number

PSAP =
A public-safety
answering point

Visited
mobile
network

M2M
platform

International
carrier for
882/883

International
carrier 1

National
operator

Is
882/883
OK?

Source: ITU News Article - Why ITU-assigned numbering ranges are critical to road safety - March 2020

- Numbering plan administrations around the world are introducing longer numbering ranges for M2M/IoT
- ITU also has numbering ranges for global services which can be used for M2M/IoT
- There is evidence that ITU numbering ranges are a popular choice for eCall (two thirds of eCalls processed in France in 2019 had a +882 or +883 CLI)
- MNOs using these ranges have taken steps to publicise the numbers - https://www.itu.int/dms_pub/itu-t/opb/sp/T-SP-OB.1155-2018-OAS-PDF-E.pdf)
- Orange and ECC organised a test and follow-up survey earlier in 2019

Who does what:

- Mainly relates to ITU numbers and distant national numbers (national EU numbers must be open)
- ITU TSB assigns E.164 numbering resources for M2M global services, including for use by the eCall service.
- Fixed line operators, and primarily those serving as telephony service provider to PSAPs, to provision these number ranges on their networks.
- There is a need to define a permanent place where these numbers and associated Mobile Network Operators are published. Amendment to ECC Rec (17)04 will provide this.
- Raise awareness of the availability of this information
- National administrations in conjunction with emergency services associations can play a significant role in strengthening the message.
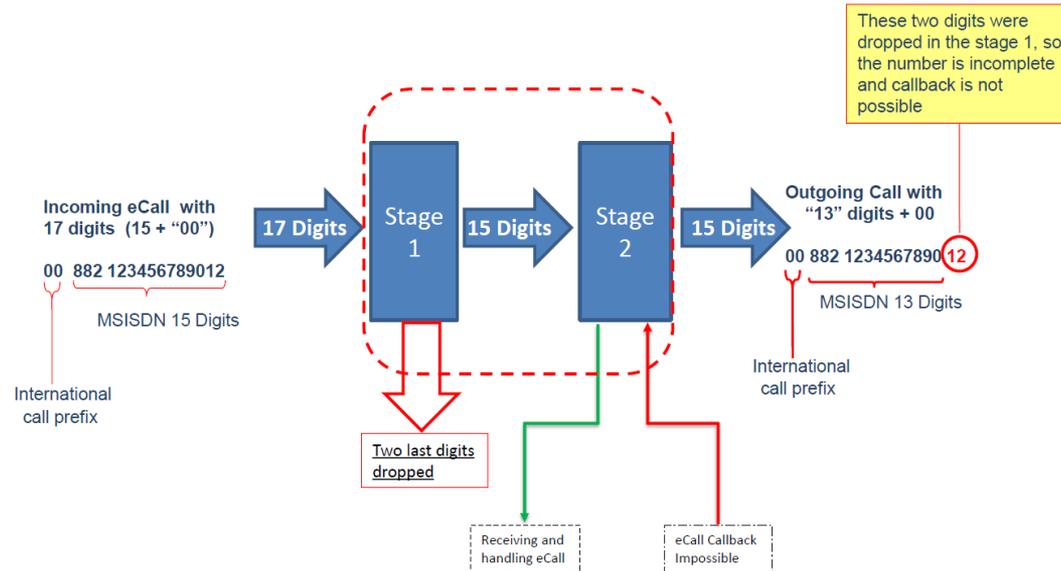
Amendment to ECC Recommendation (17)04

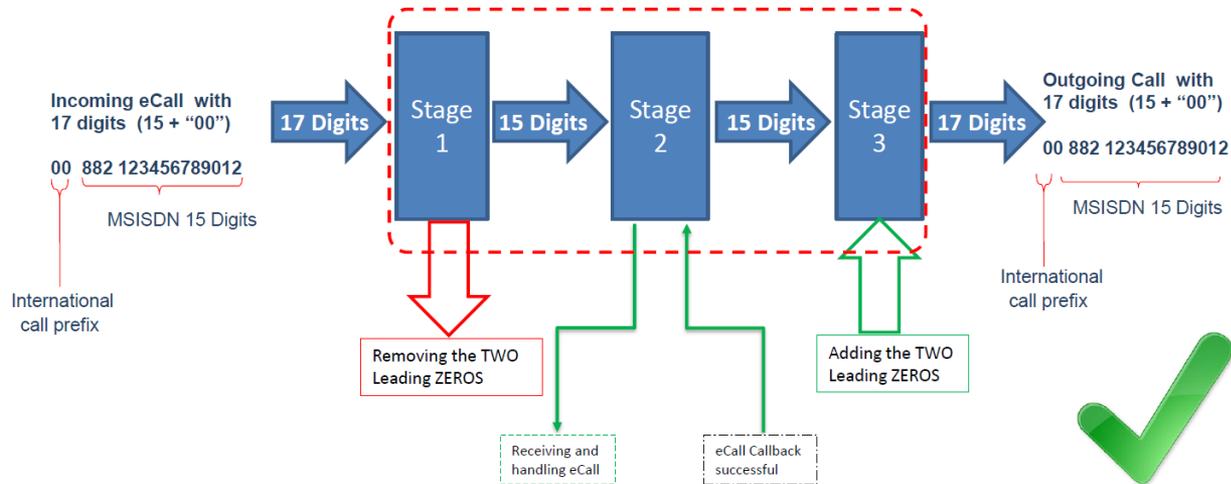| Number Type	Assigning Administrator	Number length	Number Range (CC+IC+SN)	This range is exclusively used for eCall	Assignee	More information
Global numbers	ITU	15 digits	+883 130 xxx xxx xxx	Yes/No	Orange	e.g. hyperlink to further information/contact information
Global numbers	ITU	15 digits	+882 39x xxx xxx xxx	Yes/No	Vodafone	
Global numbers	ITU	15 digits	+882 37x xxx xxx xxx	Yes/No	AT&T	

Amendment to ECC Recommendation (17)04

5. where E.164 numbering resources for global services (assigned by ITU TSB) or national numbering resources from another country are used, assignees are responsible and should make reasonable efforts to ensure that the numbers are diallable and facilitate call-back from the PSAP to the vehicle Europe-wide; To assist with the implementation of this recommendation, Annex 1 contains a list of assigned numbering ranges/ sub-ranges, reported by assignees, that are being used for eCall in Europe. This Annex will be updated periodically as required;

6. encourage all those operators involved in the conveyance of eCall call-back to commit to charging reasonable tariffs at both wholesale (termination and transit) and retail levels for calls originating from PSAPs towards numbering ranges used for eCall;

2. Enterprise solutions not configured to handle longer numbers (1)

These two digits were dropped in the stage 1, so the number is incomplete and callback is not possible

Incoming eCall with 17 digits (15 + "00")

00 882 123456789012

MSISDN 15 Digits

International call prefix

17 Digits

Stage 1

15 Digits

Stage 2

15 Digits

Outgoing Call with "13" digits + 00

00 882 1234567890 (12)

MSISDN 13 Digits

International call prefix

Two last digits dropped

Receiving and handling eCall

eCall Callback Impossible

Workaround already in place in Portugal

Who does what:

- PSAPs should work with their PBX providers to ensure that (1) relevant ITU TSB numbering ranges are open on the PBX and (2) their PSAP PBX systems are properly configured to be able to handle longer numbers (at least 17 digits) so that:
  - On incoming calls, the CLI is correctly presented to the call taker.
  - On outgoing calls, routing tables are correctly configured to so that longer numbers are dialable and presented to the public network in the correct format.

- +881 numbers used for satellite services. Very high termination rates. If the network only analyses +88 then satellite call cost could apply. (My own theory)
- Country A – 17c per min
- Country B – €7.50
- Country C - €3.72
- Country D - €0.25
- Some PSAPs unable to identify the individual bill item.
- Another country experienced a call charge of €5 per min last year but the billing was resolved bilaterally and is now 5 cents per min.

Who does what:

- All operators have a role to play in making eCall a viable and affordable service for PSAPs.

- At wholesale level, all operators should charge reasonable tariffs for calls terminated or transited to these numbering ranges.

- Fixed line operators should ensure that reasonable tariffs are applied for these numbering ranges at the retail level.

Thank You

Freddie McBride
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European Communications Office
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Discussion on open eCall challenges Round I

09:45 – 10:30

All participants are welcome to discuss on open eCall challenges

- Urgent technical tasks waiting to be completed → Prioritisation necessary?

17-digit number dial to IVS
False calls from IVS
NG 112 eCall
2G/3G Sunset
Data transmission between actors
Unified method of testing for OEM
Last two known locations supplied

Discussion on open eCall challenges

17-digit number dial to the IVS (eCall callback issues)

<u>Problem definition (see slide 11-26):</u>
- Numbers not provisioned on fixed-line networks (and possibly transit networks). Therefore, outbound call fails.
- Enterprise communications solutions (i.e. PBX systems) not configured to handle longer numbers – typically between 12 and 15 digits (17 digits when you add the "00" international dialling code). These could be ITU numbers or national numbering ranges dedicated for M2M/IoT
- Cost of calling ITU numbering ranges as well as international rooming costs
- Contains the whole eCall chain (PSAP, TSP, IVS and MNO)

<u>Interested experts (reported within the workshop):</u>
- Frank Brennecke (OECON Product & Services)
- Freddie McBride (European Communications Office)
- Christina Lumbreras (EENA)
- AO Glonass is interested in the topic of international rooming challenges

<u>Best practice solutions or ideas to solve the problem in Europe and across :</u>
- Workaround with 17-digit dialing and eCall callback is already in place in Portugal (see slide 22)

False calls from IVS

Problem definition :
- Most of the incoming eCalls from the IVS to the PSAP are false calls as there is no emergency behind them, especially too many test calls end up at the PSAPs (despite special test emergency numbers)
- Most of the false calls are triggered manually, but there is no clear classification where the false calls are from (no uniform statistical approach in Europe)
- PSAPs have identified several types of false calls in Europe and Russia: IVS malfunctions, incorrect operation of SOS-Button, lots of test calls by OEMs and IVS developer, too little information about the 112 eCall (manually or automatically) from the vehicle distributor to the user
- Statistic of the European Commission shows that issue with false calls across Europe (Status of Feb 2020): https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=64510

Interested experts (reported within the workshop):
- Christina Lumbreras (EENA)
- Artem Klimovskiy (AO Glonass)
- Ákos Léstyán (Albacomp Hungary)
- Michael Meitzner (Continental Automotive)
- Diego Markich (Motoblockchain Spain)

Best practice solutions or ideas to solve the problem in Europe and across :
- In Russia, there is a special unified software for PSAPs to detect eCalls and to generate statistics on, among other things, false calls
- In order to avoid the problem of test calls, in Russia exists a test PSAP service platform where OEMs or IVS developer can test the eCall

Discussion on open eCall challenges

2G/3G Sunset and NG 122 eCall

Problem definition:

- In the near future there will be a shutdown of the 2G and 3G network and will be replaced by the new 4G and 5G network
- The 2G and 3G sunset can be summarised with the NG 112 eCall which is based on the 4G and 5G network
- Major issue which needs to be addressed: What is happening with systems already on the road with 2G and 3G network?
- In Europe there is no road map and no clear view for the shutdown of 2G and 3G as well as for the roll-out of 4G and 5G
- The question: 'Is NG 112 eCall the solution for the 2G and 3G Sunset?' needs to be discussed

Interested experts (reported within the workshop):

- Yury Grin (AO Glonass)
- Christoph Lebelt (Diagdes)

Best practice solutions or ideas to solve the problem in Europe and across :

- The European funded sAFE project is working on the topic of NG 112 eCall, but there is still a lot of work.
- This issue needs to be discussed with the whole eCall chain as well as with the European Commission and European regulation bodies

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Data transmission between actors

Problem definition:

- There are a lot of situations where data being transmitted
- A clarification on what kind of data between what kind of actors can be transmitted needs to be discussed
- Within this working group the following question needs to be addressed: Is there a specific challenge between certain actors (PSAP, TPS, TMC etc.) or is this challenge an ongoing issue to ensure the transfer of data between eCall stakeholders (e.g. through standardised data etc.)?

Interested experts (reported within the workshop):

- -

Best practice solutions or ideas to solve the problem in Europe and across:

- -

Unified method of testing for OEM

Problem definition:

- Actual there is no mutual recognition of test results between Europe and the Russian Federation OEMs or IVS vendors during certification testing and type approval
- Currently OEMs are mandated to pass some tests under European Union regulations and at the same time under the UN regulation (UN-R 144) for the Russian market (double crashes in Russia).
- The aim of the harmonised UN-R 144 regulation is to prevent double crashes of the same vehicle using the same test method in order to reduce costs on the Russian and European market.
- BMW has vehicle which are certified by the regulation UN-R 144 but there are still double crashes in Russia

Interested experts (reported within the workshop):

- Artem Klimovskiy (AO Glonass)
- Mario Singer (BMW Group)
- Ákos Léstyán (Albacomp Hungary)

Best practice solutions or ideas to solve the problem in Europe and across:

- Find a suitable solution and to simplify the certification homologation procedure for all (OEMs, IVS vendors European and Russian authorities etc.)

Discussion on open eCall challenges

Last two known locations supplied/Wrong MSD data

Problem definition:
- In many cases (in Europe as well as in Russia) several systems do not provide the last two known locations because they are optional fields in the MSD so PSAPs are not able to identify the direction of the vehicle
- In the current version of EN16454 (EN16454:2015), the last two locations cannot be tested, although they are mandatory in the currently valid EN15722:2020. The question is 'How to perform a conformity assessment?'
- PSAPs detected incorrect data in the MSD. The most common error received was that 255 passengers were displayed in M1 vehicles. The same challenge also exists in Russia

Interested experts (reported within the workshop):
- Christina Lumbreras (EENA)
- Öörni Risto (VTT Finland)
- Artem Klimovskiy (AO Glonass)

Best practice solutions or ideas to solve the problem in Europe and across:
- Amendment of the current MSD version to a new MSD version with mandatory fields for the last two know locations
- Find a suitable solution for OEMs/IVS vendors to include the last two known locations as mandatory fields in the software with all respect to data privacy

Further PSAP related problems:

1. Call-Back issues/challenges:

- see slide 30

2. TPS integration:

- In Europe, a TPS integration is missing and there is no common knowledge regarding some descriptions and interfaces as well between the PSAPs and TPS Provider in the systems
- For e.g., in Germany, there is a regulatory problem because the PSAP side has produced a paper in which they have defined the requirements for TPS providers. However, the acceptance between TPS providers and the national authority has not yet been done
- Interested experts (reported within the workshop): Christina Lumbreras (EENA), Daniel Rata (112 service Romania)
- Possible solution: Future authorised eCall Assocation could provide the necessary inventory (for TPS integration to PSAP systems)

3. Wrong data in the MSD:

- PSAPs detected incorrect data in the MSD. The most common error received was that 255 passengers were displayed in M1 vehicles. The same challenge also exists in Russia (see slide 40).

4. Access to EUCARIS :

- Important topic for PSAP side

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Further steps

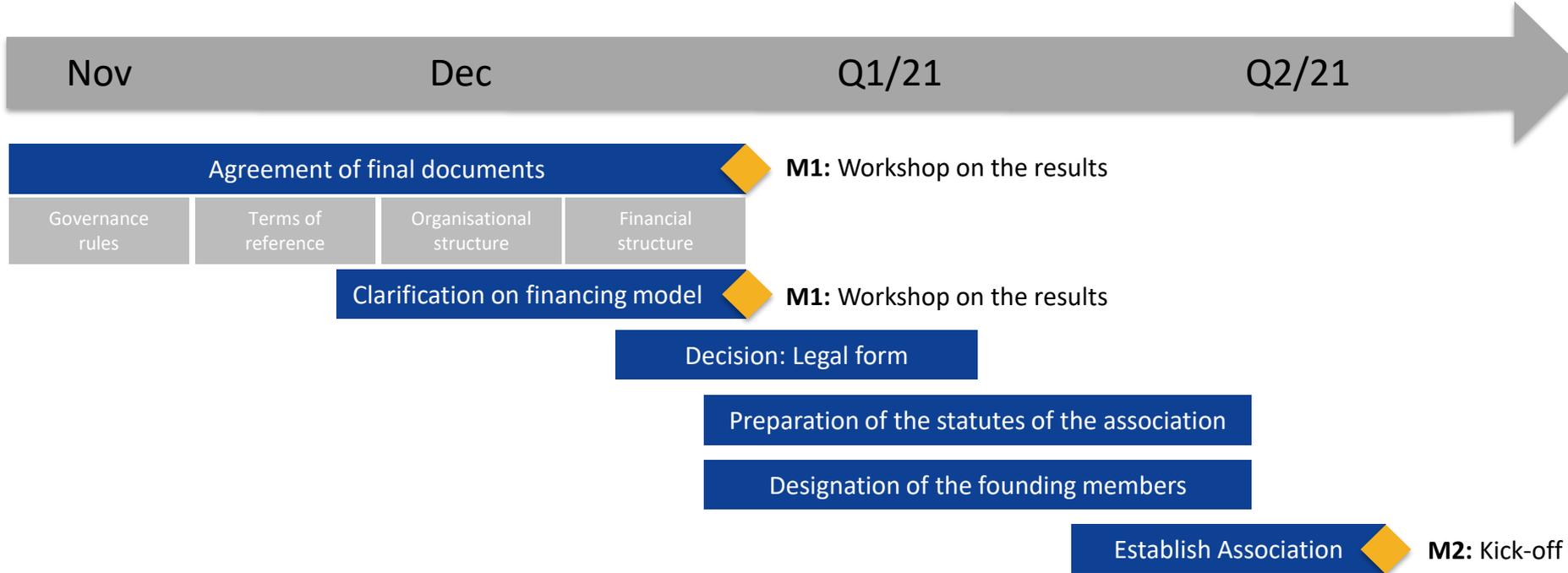| Phase 1	Phase 2	Phase 3		Phase 4
Establish eCall Association	Building up an operational support	Highlight Good Practice across all facets of eCall	Identify and provide viewpoints or solutions on existing risks or issues	Develop and deploy new harmonised eCall solutions
Q1-Q2/2021	Q1/2021	Q2-Q3/2021	Q2-Q3/2021	>Q3/2021

Further steps

Nov	Dec	Q1/21	Q2/21

Agreement of final documents — **M1:** Workshop on the results

Governance rules	Terms of reference	Organisational structure	Financial structure

Clarification on financing model — **M1:** Workshop on the results

Decision: Legal form

Preparation of the statutes of the association

Designation of the founding members

Establish Association — **M2:** Kick-off

Thank you for your attention!