Clarification Paper – *sub-working group e-call requirements.*

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Chapter 1 - Introduction

1.1 Objectives

Resulting from the e-call steering group, a small working party from the PSAP side was organised to draft the requirements on e-call. These requirements more or less had been drafted previously, but have to be consolidated to enable a swift take-up and implementation of e-call.

This document will also address questions on performance in network and call handling of emergency calls to provide sufficient insight for the industry.

In principle, this document will not add new items to the requirements as have been documented before. Input is from previous projects and activities concerning e-112 and e-call like CGALIES (Coordination Group on Access to location information for Emergency Services), the E-merge project, which in detail documented PSAP requirements on e-call and previous results from the e-call driving group.

1.2 Stakeholders concerned

Input for this document has been received from the PSAP in:

- The Netherlands.
- The United Kingdom.
- Finland.

This is considered to be sufficient as those are to be considered the core group of technology leading PSAP's in Europe.

It should be mentioned that the input provided has acquired consensus already; this consensus will be maintained. This document is not meant to start discussions on requirements again

Chapter 2 - Executive summary

The core group of EU leading PSAP's herewith document their position, outstanding issues and requirements towards a swift implementation and take-up of e-call.
Resulting from previous meetings of the e-call steering group issues are described here on

- Network.
- Performance indicators.
- Location accuracy.
- Status of e-call and MSD from the PSAP perspective.
- A standardised interface between network and PSAP.

Key issue is the fact that the PSAP's agree to consolidate the MSD as it has been described and documented now.
This is deemed necessary to take up a swift implementation.
In addition to this, the PSAP's strongly wish to discuss further development of necessary data in the e-call steering group forum to be integrated in the MSD and FSD along a path of further technological developments.
The other issues and requirements described in this document reflect results obtained from previous efforts, both from e-call, Emerge and e-112.
Specifically concerning e-112, the CGALIES final report, submitted in 2002 to the European Commission reflects the consensus of PSAP's and telecom operators. This consensus was needed to implement the location determination function on emergency calls by the telecom operators as laid down in the Universal Directive from the European Commission from March 2002.
The CGALIES findings led to a COMMISSION RECOMMENDATION on the processing of caller location information in electronic communication networks for the purpose of location-enhanced emergency call services, outlining a best practice approach, allowing all parties concerned to get a foot on the ladder..
This recommendation concerned also the implementation of e-call to which the member states were invited too.

Chapter 3 - Network issues.

3.1 Network architecture.

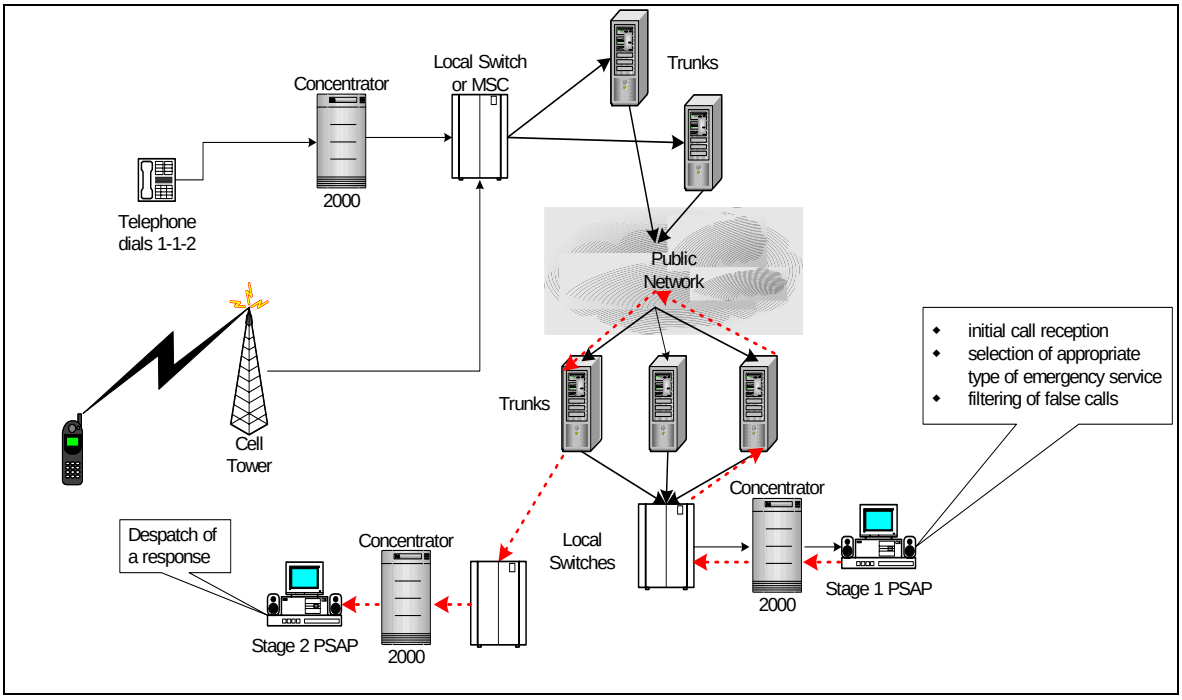

Figure 1. Typical network architecture 112[1]

The diagram shows typical switching elements. For a wire line/fixed phone network, there are usually local "concentrators" which bring together about 2000 lines into a small switch with limited capabilities/intelligence. The local switch is the first switch with appreciable processing capability that is linked to the main switches ("trunks") that form the core of public networks.

For mobile calls, the cell tower/base station is shown linked to the Mobile Switching Centre (MSC) which has similar capabilities to a fixed network's local switch.

In Europe calls are typically routed to the Stage 1 PSAP by data set in the public network switches.

At the Stage 1 PSAP, in addition to the functions indicated in the diagram, further call routing can occur using a PSAP database. Calls are then routed back through the public network (red lines) to the selected Stage 2 PSAP.

As an example of the precautions taken to ensure 112s reach their destination, the diagram shows 3 trunk switches connected to the local switch of the Stage 1 PSAP.

[1] CGALIES final report. February 2002

Within CGALIES, a questionnaire[2] was issued and circulated through the European Telecommunications Network Operators' association (ETNO) in order to obtain a clear picture of the varying ways 112 services were provided throughout the EC. The results obtained from 12 countries show that many differences exist in the way networks are processing 112 calls (even for fixed networks) and that the way calls are handled in the PSAPs may differ a lot depending on the country concerned.

3.1.1 Network access to PSAPs/Emergency Service Centres.

As well as 112, some countries use up to 7 separate codes for different emergency services.
The routing of fixed calls uses either the originating switch identity or telephone area code and mobile calls use the base station ID, or groups of base stations. As a consequence, there is some misrouting of calls.
At present, there are very few networks that separate 112 calls from other calls, and there is limited use of automatic alternative routing paths or other protection/preference measures to ensure 112 calls always reach a PSAP.

3.1.2 Organisation of Public Service Answering Points/ Emergency Service Centres

There are between 14 and 1060 Stage 1 PSAPs in each EC member country, with many more Stage 2 PSAPs. There are usually separate PSAPs for Fire, Police, and Ambulance/Medical Centres
The 112 calls are received by a mixture of either the Police or Fire or, Ambulance PSAPs, or (in three countries) a PSAP run by a separate organisation. Most therefore separate 112 reception (Stage 1 PSAP) and despatch of a response (Stage 2 PSAP).
Calls are either extended from the Stage 1 PSAP to the Stage 2 PSAP with the caller on line (with or without CLI transfer), or a separate call is made to transfer incident details between the PSAPs. For example, the Police Centre (Stage 1) might answer the 112 and need to transfer to the Ambulance Service (Stage 2) as the caller needs medical help.
If the selected PSAP becomes unavailable, there is often no automatic alternative route to another back-up PSAP that can deal with the call.

[2] Questionnaire on the Requirements of National Civil Protection Authorities Regarding the Location of Callers in Emergency Situations (Enhanced 112), sent by The European Commission DG Environment, Directorate C, nucleair and civil protection on 21 December 2000.

3.2 Carrier aspects.

A specific issue of emergency calls in a network is the roaming issue. Normally, all roaming conditions will apply if one is abroad and dials 112 on the GSM, this principle is known as roaming.

But in some memberstates, is has been arranged that there will be one telecomoperator that has to receive and relay all incoming emergency calls, this is not so much an issue of roaming but merely of selecting a certain carrier.

This is best described by an example: in The Netherlands, KPN is assigned as the carrier of all 112 messages. That will mean that all other operators have to forward their incoming 112 calls to the KPN network. Via the KPN network, the 112 messages are forwarded to the PSAP.

The reason for this is

- Span of control. It is easier to upgrade the functionality of 112 if there is only one telecomoperator to do business with regarding to 112.
- Next to this, this is a situation that has emerged from the past, when there was only one telecom operator.
- Partnership. KPN has a partnership on 112 with the Ministry of Interior of The Netherlands, it is a form of public-private partnership in which KPN has committed itself to assume part of the overall responsibility for 112 as well, as far as it will concern the network of 112, not the PSAP's and emergency service operation itself.

The latter item has proven to achieve the best possible Level of Service for 112 telecommunication in The Netherlands.

It would be advisable to find out if this applies in other member states as well.

Chapter 4 - Performance indicators.

This addresses the time that is needed for the different steps in handling 112 calls.

There were four questions asked to the above-mentioned PSAP's.

1. Is there a performance indicator for the time it may take for an emergency call to reach the PSAP when initiated from the handheld GSM?
2. Is there a performance indicator for the time in which an emergency call has to be relayed from the PSAP to the appropriate emergency service?
3. Is there a performance indicator for the time in which an emergency unit has to be dispatcheda after the reception of the emergency call at the emergency service?
4. Do we, as PSAP's, know how many calls are simply "lost" before they reach the PSAP?

Question 1 was considered to be a typical network operator issue, PSAP's do not know this, nor has this been defined.

The UK PSAP, operated by BT, has a target of answering 95% of 112/999 calls within 5 seconds of the call reaching the PSAP switch (see figure 1).

The Finnish PSAP has no answer on this. The Dutch PSAP has not set a performance indicator for this either, but when connected to the network, 112 calls have priority over all other calls.

There will always be some network set-up time within GSM after the send button has been pushed. No figures are known to the PSAP's on this.

Qustions 1, 2 and 3 could be best captured in a matrix:

	Q1. Performance indicator for the time it may take for an emergency call to reach the PSAP when initiated from the handheld GSM.	Q2. Performance indicator for the time in which an emergency unit has to be dispatched after te reception of the emergency call at the emergency service.	Q3 Performance indicator of the time within which to arrive at the scene (this was included in anwer 2)
Netherlands.	• 90% of incoming calls have to be answered within 10 seconds. • Calls have to be evaluatied and forwarded to 2nd stage PSAP's within: ➢ 20 seconds for fixed network calls. ➢ 30 seconds for mobile calls. • 2nd stage PSAP's have to answer 90% of calls from 1st stage PSAP's within 10 seconds.	• Dispatch within 90 seconds after call reception.	• Urband area: 10 minutes. • Rural/suburban area: 15 minutes..
UK	• 95% of incoming calls have to be answered within 5 seconds; typically, this is 7 seconds. • PSAP to 2Nd Stage PSAP: 90% of the calls have to be forwarded within 10 seconds. • Ambulance	• Dispatch performance time dependent on the urgency.	In the UK, this is risk/safety related: • Area I, High risk: target is: within 15 minutes in 80% of all cases. For large urban areas like London this is 10 minutes. • Area II, Lower risk: target is: within 1 hr in

	services are moving towards the target of anwering 95% of incoming calls within 5 seconds. • This is targeted but not achieved yet.		90% of all cases. (This is a very recent national standard). • Area III: Lowest risk: to be attended later. • Area IV: can be handeld otherwise, like by phone etc.
Finnland	• Incoming call has to be answered within 10 secs. Average is about 8 seconds. • Risk evaluation and dispatch to emergency service within 90 seconds.	• Dispatch within 1 minute after reception of call at emergency room.	• In Finnland, three areas have been defined, not geographically but risk related: 1. Area I (high risk like chemical plants): within 6 minutes. 2. Area II (middle risk): within 10 minutes. 3. Area III (low risk): within 20 minutes.

4.1 Lost calls.

Question 4 yielded as result that in all countries, calls are lost for indefinite reasons sometimes in the network. There are no clear statistics on this. Finnland PSAP could not provide an answer to this, the UK PSAP stated that it is a sure thing that calls disappear somewhere, but has no actual statistics on this.

The NL PSAP did investigate this in 2004.

In 2004, 0.3% of the total nr of 112 calls was lost; this is a volume of 12.000 calls a year, 32,8 calls a day. KPN discovered that the vast majority of these calls lasted less than 1 second. It was assumed that in these cases a 112 call was set up but aborted within a second, thus not reaching the PSAP switch at all.

A further investigation was carried out by the PSAP on this. Part of this investigation was to call back to the callers that initially got lost. It turned out that a great number of people stated not to have dialled 112 at all.

It was assumed that this could be attributed to a phenomenon known as: trouserpocket callers, freely translated . This happens when a GSM is carried in a trouser pocket and a quick dial key is pressed unintentionally, usully this is key 1.

Chapter 5 - Open issues.

5.1 Location accuracy[3].

CGALIES looked in detail to parameters on location accuracy:

5.1.1 Location databases.

Location databases for use on 112 calls would typically be those customer records maintained by fixed network operators of the line renter and the installation address of the line, or for mobile networks it would be the so-called Gateway Mobile Location Centres (GMLCs or MLCs) which can dynamically establish a caller's current location.

Access by PSAPs to name and address information for fixed calls and location information for mobiles is permitted for all 112 calls by a secure, restricted method. Accuracy of the information is critical and for fixed lines at least should be more than 99%. Accuracy for mobile location is more complex.

112 databases and sources of location information need to be available 24 hours, every day and kept accurate in line with common digital maps/databases in use in the geo-political area. A map reference must be given in a format that when passed-on and used on another location display system, it actually will give the right physical position in a street/rural area.

Handset location information and owning network needs to be provided for all mobile numbers.

The number of 112 databases should be minimised. Each network will have its own database but access to the information by PSAPs could be made simpler if for example fixed networks can send their information to a common 112 database, as is done for Directory Services.

The transfer of all information into and out of the databases or Mobile Location Centres need to be with agreed data formats and protocols. The need for some standardisation was recognised.

Some countries, for example Norway, Sweden and the UK, already have such protocols and it would be helpful for PSAP suppliers if the number of such protocols and formats was minimised and was based on a well-known protocol such as TCP/IP.

Finally, it was noted that such databases could usefully include extra fields to cover information on medical conditions or fire hazards.

[3] CGALIES final report. February 2002

5.1.2 Location accuracy EU.

The CGALIES EU questionnaire[4], mentioned before, also addressed the need to identify common parameters for location accuracy.
The requirements obtained through the questionnaire are summarised in the following table.

	Indoor	**Urban**	**Suburban**	**Rural**	**Highway Crossroads**
Caller can provide general information	10 - 50 m	10 - 50 m	30 - 100 m	50 - 100 m	20 - 100 m
Caller cannot provide any information	10 - 50 m	10 - 50 m	10 - 100 m	10 - 100 m	10 - 100 m

Figure 2. Location table from the CGALIES EU questionnaire.

The caller's position mentioned above must be available within 30 seconds of call initiation.
In addition to this accurate positioning information, emergency services indicate that it can be useful for an emergency centre to receive as quickly as possible a first rough estimate of the caller's location (and to receive later the accurate positioning information mentioned above). According to the responses to the questionnaire, the required accuracy for this initial positioning information is generally situated between 200 and 300 m (for all environments).
This initial position should be available approximately 7 seconds after the call is initiated.
Emergency services also indicate that the availability of location information could be used not only to determine the caller's location but to recognise that several calls are for the same incident too ("Call cluster"). The associated accuracy requirements are approximately 150 m in urban environment and 500 m in suburban and rural environments.
In such a case, location information must be available before the call is handled, that is to say a few seconds after the initiation of the call.

5.1.3 Location accuracy US. (FCC rules).

In the US, the need to enhance emergency call services, in particular for calls originating from mobile phones, was recognised in the mid 1990's under the threat of legal action. The result was a mandate of the Federal Communications Commission (FCC) which was adopted in 1996. The mandate requires operators to determine and forward the location of callers in an emergency.

[4] Questionnaire on the Requirements of National Civil Protection Authorities Regarding the Location of Callers in Emergency Situations (Enhanced 112), sent by The European Commission DG Environment, Directorate C, nucleair and civil protection on 21 December 2000.

The implementation of the mandate by operators met severe difficulties. As a consequence, the mandate needed to be revisited and was amended several times.

The present mandate foresees the introduction of a location capability in mobile communications systems in two steps:

- Phase I: wireless carriers have to deliver the telephone number and the location of the base station or cell site together with its radius of service in meters to the designated Public Safety Answering Point (PSAP).
- Phase II: is depending on the technology used: the use of handset-based technology requires 50 m accuracy for 67% of calls, and 150 m for 95% of calls; the use of network-based technology requires 100 m accuracy for 67% of calls, and 300 m for 95% of calls.

Phase II should be implemented by October 2001. The process of implementing FCC rules was considerably slowed down by wavering the requirements of the FCC.

5.2 EU approach.

CGALIES took duly note of the legislative approach in the USA and the problems this caused on acceptation by the telecom operators. Therefore, in the European Union, the European Commission decided to pursue a more consensus driven approach. This approach was reflected in the Communication[5] on e-112 and was documented:
"For every emergency call made to the European emergency call number 112, public telephone network operators should, initiated by the network, forward (push) to public safety answering points the best information available as to the location of the caller, to the extent technically feasible. For the intermediate period up to the conclusion of the review as referred to in point 13 below, it is acceptable that operators make available location information on request only (pull)".

5.3 Need for 1 meter accuracy.

In CGALIES, the issue of location accuracy was debated very in-depth. Ultimately, the need for the emergency services will be 1-meter accuracy, as expressed by the PSAP's, **but it was considered and acknowledged, that this was unrealistic to achieve by either GSM location capabilities and/or GPS location capabilities as these exist today.** Nevertheless, the stakeholders involved in CGALIES: telecom operators and PSAP's, realised that there

[5] COMMISSION RECOMMENDATION of 25/07/2003 on the processing of caller location information in electronic communication networks for the purpose of location-enhanced emergency call services

will be some kind of a migration path towards more accurate location information in the near future.

GPS performance has improved drastically over the past few years since the USA DOD abandoned the SA principle (Selective Availability). Nowadays, the USA is executing an update on GPS overall, leading to more accurate location data. In the EU, Galileo is expected to become operational as off 2008, adding 30 satellites and in combination with GPS, more accurate location data will become available, even under difficult circumstances like within building, in an urban canyon and under a leaf canopy. Combined GSM/GPS/Galileo functionality in handsets will be the next topic, creating hybrid solutions for location finding and determination; the EMILY project is on this.

The need for 1-meter accuracy can be best depicted by examples:

- First of all, it will be needed for accurate route guidance to the scene of the incident via the fastest possible route; the Golden Hour principle counts here!
- 1 meter is needed to distinguish exactly the lane where the incident occurred; again, this is related to proper route guidance and fastest time of arrival.
- This applies also if there is a ditch or a canal, 1 meter will give the proper distinction on what side of the ditch or canal the incident occurred.
- This applies to canyon and gorges in mountainous areas also.
- In rough and inaccessible terrain, it can be very difficult to locate an incident, even within 10 or 50 meters.
- A car can simply vanish into the shrub, a few years ago there was an example on London's M25 orbital ring road. A car was detected only after 5 weeks!
- Another example is from the USA, a car remained undetected for a week; the driver freed himself from the wreckage by cutting off his own thumb.
- A mountaineer in the US fell into a gorge and got trapped. He cut of his own arm with a pocket-knife and was rescued eventually.
- A car can get submersed without leaving a trace; the water plants floating on the surface can render a car totally invisible from the shore.

But all and all, there can be no reason why this should not be applied if it will become possible in terms or technological feasibility and costs.

The core group of PSAP's agree to consolidate on what is possible today but express their need for more accurate positioning down to the best possible achievable eventually. This will be pursued along a path of further technological developments in cooperation and discussion with the industry.

5.4 Status of e-call and MSD.

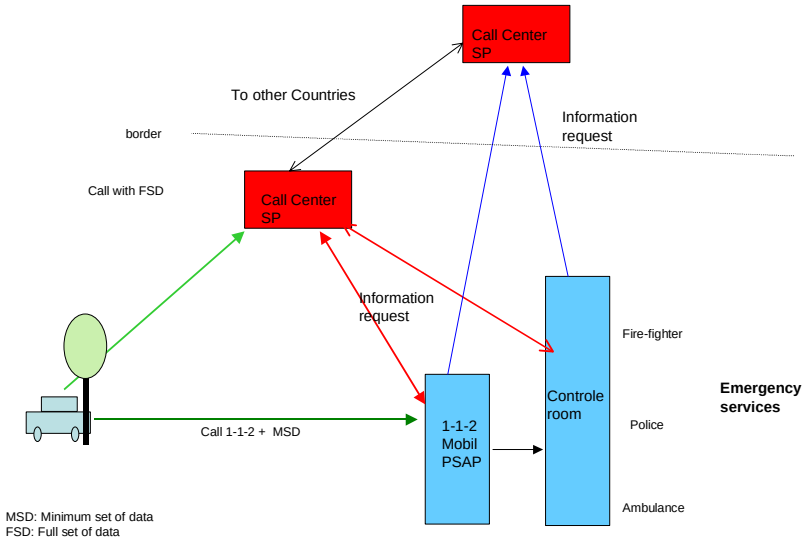

Figure 3. e-call architecture consolidated.

Figure 3 represents the e-call architecture as this has been accepted fully.
The PSAP's would like to stress that they stick to this architecture as has been defined withing e-Merge and e-safety/e-call. An emergency call, either triggered by sensors or manually, will initiate a 112 call directly to the appropriate PSAP, together with the MSD data message.
Next, a call is made to the SP, together with the FSD.

Both MSD and FSD contain a unique identifier; this identifier will guarantee that either a PSAP or an emergency service operator can contact the SP or, in case of a foreign car, the SP in the country where the car is registered to mutually exchange information.
The unique identifier will also guarantee that the privacy of persons involved in the accident is protected in the best possible manner.
Recently, rumours are circulating to abandon this unique identier, for reasons unknown to the author of this document.
Again, the EU PSAPs stress the importance of the unique identifier and maintain this as a 1st priority, non-negotiable PSAP requirement.

The EU PSAPs would like to state that they agree to consolidate the MSD as it has been agreed and as it is right now; this for reasons to enable the swift take-up and implementation of e-call.
The PSAP's in The Netherlands and in Finland are well underway to implement full-functional e-call in their systems. The rollout of e-call should not be hindered by new discussion about the contents of either the MSD or the FSD.

At the moment, the content of the MSD has been defined as follows (according to the latest information from Ertico):

Minimum Set of Data

This paragraph describes the MSD that must be sent from the vehicle in case of an emergency call to the most appropriate PSAP. This data is to be sent from the vehicle via the Telecom operator using different data transmission ways to the PSAP. The information elements in the MSD have been selected on the basis of their relevance in an emergency rescue situation.

The following information elements are of interest in an emergency situation. These information elements are specified in the component part of the eCallMsg Abstract Syntax Notation according to the GST RESCUE protocol stack definition.

The field "parameter" of the component part of the eCallMsg defines the information elements described below.

Information Element	**Description**	
EntityType	Unit[6]	Not Applicable
	Description	Type of the Entity : Car, Test_Car, EA, Test_EA...
	Source ASN.1 type	IA5string

[6] As it is used by ASN.1

Information Element	Description	
	Source ASN.1 range or defined values	SIZE (1) ENUMERATED car(0), public vehicle truck(1), truck publicTransport(2), Public transport ev(3), Emergency vehicle psap1(4), Public safety answering point ea(5), Emergency service pS(6), Private Service car_test(7), simulated crash ea_test(8), simulated Emergency service ..., extensible
	Length upper bound[7]	1Character
CLI	Unit	Not Applicable
	Description	Phone Number without the beginning "+" character (E164 address)
	Source ASN.1 type	IA5string
	Source ASN.1 range or defined values	(SIZE (2..15)) (FROM ("0".."9"|".")
	Length upper bound	16 Characters
GPS Position Latitude	Unit	milliarcseconds
	Description	WGS84[8] - accuracy 0.03 meter
	Source ASN.1 type	INTEGER
	Source ASN.1 range or defined values	-324,000,000..324,000,000
	Length upper bound	4 Bytes
GPS Position Longitude	Unit	milliarcseconds
	Description	WGS84 - accuracy 0.03 meter
	Source ASN.1 type	INTEGER
	Source ASN.1 range or defined values	-648,000,000..648,000,000
	Length upper bound	4 Bytes

[7] The actual length will be calculated dynamically by ASN.1
[8] Encoding taken from GTP Specifications

Information Element	Description	
Direction of travel (heading versus)	Unit	degrees / 15
	Description	Average of latest 3 GPS positions, accuracy 15 degrees
	Source ASN.1 type	INTEGER
	Source ASN.1 range or defined values	0..360
	Length upper bound	1 Byte
Triggers activated	Unit	Not Applicable
	Description	Number of triggers activated
	Source ASN.1 type	INTEGER
	Source ASN.1 range or defined values	0..31
	Length upper bound	1 Byte
VIN number	Unit	Not Applicable
	Description	Vehicle Identification Number
	Source ASN.1 type	IA5string
	Source ASN.1 range or defined values	SIZE (20) (FROM ("0".."9"|"A".."Z"))
	Length upper bound	20 Bytes
Vehicle Make	Unit	Not Applicable
	Description	Vehicle Manufacturer
	Source ASN.1 type	IA5string
	Source ASN.1 range or defined values	(SIZE (12)) (FROM ("A".."Z"))
	Length upper bound	12 Bytes
Vehicle Model	Unit	Not Applicable
	Description	Vehicle Model Descriptor
	Source ASN.1 type	IA5string
	Source ASN.1 range or defined values	(SIZE (12)) (FROM ("A".."Z")) OPTIONAL
	Length upper bound	12 Bytes
Vehicle Colour	Unit	Not Applicable
	Description	Colour of the vehicle
	Source ASN.1 type	IA5string
	Source ASN.1 range or defined values	(SIZE (12)) (FROM ("A".."Z")) OPTIONAL

Information Element	Description	
	Length upper bound	12 Bytes
Which triggers are activated	Unit	Not Applicable
	Description	Which sensors have reached threshold value and activated its trigger
	Source ASN.1 type	SEQUENCE
	Source ASN.1 range or defined values	SIZE (0..6) OF TriggerType ENUMERATED{ fc1(0), -- Front crash sensor 1 fc2(1), -- Front crash sensor 2 rc(2), -- Rear crash sensor sc(3), -- Side crash sensor srs(4), -- Airbag sensor ke(5), -- Kinetic energy absorbed by the impacted vehicle ... -- extensible
	Length upper bound	18 Bytes
Timestamp	Unit	Seconds
	Description	Timestamp of incident event, UTC time. Seconds since 1970. (This means that this data type is valid until approximately year 2100)
	Source ASN.1 type	INTEGER
	Source ASN.1 range or defined values	0.. 4294967295
	Length upper bound	4 Bytes
Service Provider toll free number (optional)	Unit	Not Applicable
	Description	Phone Number of the Service Provider (if the driver is a subscriber) without the beginning "+" character, for language assistance services
	Source ASN.1 type	IA5String
	Source ASN.1 range or defined values	(SIZE(2..15)) (FROM ("0".."9")) OPTIONAL
	Length upper bound	16 Bytes
Service Provider IP Address (optional)	Unit	Not Applicable
	Description	Service Provider IP Address to allows the PSAP1 to request Additional Data from the Service Provider itself

Information Element	Description	
	Source ASN.1 type	SEQUENCE
	Source ASN.1 range or defined values	SIZE(4) OF INTEGER (0..999)) OPTIONAL
	Length upper bound	12 Bytes
User Country Code (optional)	Unit	Not Applicable
	Description	2 letter country code of the vehicle base on ISO-3166
	Source ASN.1 type	IA5String
	Source ASN.1 range or defined values	(SIZE (2)) (“A”..”Z”) OPTIONAL
	Length upper bound	2 Bytes

Table 1 – Minimum Set of Data – Information Elements Definition

Abbreviated trigger	Full trigger name
FC1	Front crash sensor 1
FC2	Front crash sensor 2
RC	Rear crash sensor
SC	Side crash sensor
SRS	Airbag sensor
KE	Kinetic energy absorbed by the impacted vehicle

Table 2 – Different triggers Definition

Chapter 6 - Conclusions.

The items listed in chapter 5 need to be discussed between all e-call stakeholders in order to reach a sufficient level of consensus to take up the implementation and operation of e-call.
I may be clear that for this the input of the telecom operators will be necessary; they are perhaps the most important key actor and covered already a lot of ground concerning the issue of location databases, accuracy and e-112 etc in CGALIES.
This has already been acknowledged by this e-call forum, future discussions will include the telecom operators.
In conclusion it should be stated again that the EU core group of PSAP's want to consolidate key issues like MSD, FSD and location accuracy at the status as is acknowledged and agreed today in order to take up the swift implementation and operation of e-call and e-112.
They express also the wish for further discussions on improvements on technology (sensors and the likes), communication technology, location accuracy and additions to the datasets.
This will be subject of an ongoing effort of all stakeholders after the first step of implementing e-call.

Chapter 7 - References

1 Directive 2002/22/EC of the European parliament and of the council of 7 March 2202.

2 CGALIES final report, February 2002.

3 Questionnaire on the Requirements of National Civil Protection Authorities Regarding the Location of Callers in Emergency Situations (Enhanced 112), sent by The European Commission DG Environment, Directorate C, nucleair and civil protection on 21 December 2000.

4 COMMISSION RECOMMENDATION of 25/07/2003 on the processing of caller location information in electronic communication networks for the purpose of location-enhanced emergency call services.

5 Minimum set of data –Message structure 140905 V1.0