

# *Comments on MSD Transfer for eCall over IMS*

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# Summary of Proposed Transfer Mechanism



## Transfer as part of eCall Establishment

- MSD is transferred as a MIME body part in the initial SIP INVITE
- The MSD is expected to contain an XML object as defined by CEN [Ref 1]
- A Call-Info header can contain an eCall indicator and a pointer to the MSD
- An NG eCall capable PSAP returns an MSD ack. (referenced by a Call-Info header) in the MIME body part of a SIP 200 OK

## Subsequent Transfer during an eCall

- At any time an NG eCall capable PSAP can send a request for updated MSD to an IVS in a SIP INFO
- The IVS returns updated MSD (e.g. containing an updated location and new sensor readings) in the 200 OK

## The details of all this were agreed by IETF Ecrit in draft-ietf-ecrit-ecall-05 [Ref 2] which is undergoing WG last call

## From an SA2 perspective

- The stage 3 details in draft-ietf-ecrit-ecall-05 [Ref2] are not being proposed yet – these are for CT1 to evaluate
- The proposal for SA2 is to carry the MSD and MSD metadata (e.g. MSD ack, MSD request) as part of call signaling (e.g. as opposed to using a separate data channel)

# Rationale for Transfer Mechanism (1)

## Previous evaluation and Development

- The mechanism was evaluated versus other alternatives by the ETSI MSG STF tasked to report on NG eCall for the EU and was the preferred solution [Ref 3]
- The mechanism was further developed by IETF Ecrit who added capabilities that could be used in future or in other regions (e.g. transfer of other types of data and control signaling)

## The amount of MSD data is not large

- the example shown in Figure 8 of the IETF draft [Ref 2] requires 1234 octets (exactly ignoring white space characters) for the MSD MIME body part
- SIP proxies must support messages of up to 65535 octets according to RFC 3261 [Ref 4]
- Other MIME body parts already supported (e.g. pdf-lo) can be of similar size

## Subsequent MSD transfer is unlikely to be very frequent

- Experience with E911 phase 2 in the US (where a precise UE location is available to a PSAP by request) seems to show that a typical PSAP only requests UE location once
- Given low expected eCall incidence, even a few PSAP requests for MSD should not be a burden

## While the solution (or any other solution) may not scale up for 100s of simultaneous eCalls at the same approximate location:

- This would be rare and a PSAP would still become aware of a major incident at this location
- The PSAP is likely to congest sooner than an MNO making MNO scaling ability less important

## Rationale for Transfer Mechanism (2)

- 📶 Although MSD and eCall metadata are transferred end-to-end and can be transparent to SIP proxies (e.g. IMS), the SIP INFO package in RFC 6086 [Ref 5] was designed specifically for this, so no SIP principles are being broken as regards subsequent MSD transfer
- 📶 Although transfer of more MSD data and/or other data/metadata might be added in a later release, there is no evidence now that this will occur nor, that if it does, the extra data would be very large or sent very frequently
- 📶 An alternative MSD solution that used a separate data channel would:
  - Increase MSD transfer delay by a small amount
    - Note that TS 22.101 subclause A.27.3 [Ref 6] requires that for IMS “the MSD should typically be available to the PSAP when the end to end connection with the PSAP has been established”
  - Increase complexity of implementation in an IVS, PSAP and possibly MNO
  - Reduce reliability of transfer (e.g. if a PSAP is congested and can accept and process an initial SIP INVITE that could transfer MSD but where the PSAP cannot establish media paths)
  - Require definition of a new end to end signaling protocol and transport mechanism
  - Restrict possible call routing at the PSAP side based on MSD content (e.g. indicating whether dangerous chemicals are being carried or there are many passengers)

# Conclusions

- 📶 The proposed MSD transfer mechanism aligns with the preferences of ETSI MSG and IETF
- 📶 There is no indication that the mechanism will cause problems (e.g. excessive message size or frequent transfer of large data) for the current SA1 requirements
- 📶 The mechanism has certain advantages over use of a separate data channel with regard to current standards availability, complexity, reliability, flexibility
- 📶 There is currently no indication that message size or message frequency will grow substantially in a later Release

# References

- 📶 [Ref 1] EN 15722:2015 "Intelligent transport systems - ESafety - ECall minimum set of data".
- 📶 [Ref 2] IETF draft-ietf-ecrit-ecall-05, "Next-Generation Pan-European eCall", November 2015.
- 📶 [Ref 3] ETSI TR 103.140 (2014-04): "eCall for VoIP".
- 📶 [Ref 4] IETF SIP 3261, "SIP: Session Initiation Protocol", June 2002.
- 📶 [Ref 5] IETF RFC 6086, "Session Initiation Protocol (SIP) INFO Method and Package Framework", January 2011.
- 📶 [Ref 6] 3GPP TS 22.101, "Service aspects; Service principles"