

## Annex 9

### Test method for emergency call (paragraphs 7.6 7.4 and 17.3.3, 16.3.3, 17.5.)

#### 1. Table for pre- and post-crash testing

Test method	Pre-crash functional check	Post crash functional check
1	Not required	Functional check using over the air transmission for MSD and voice call via a real PLMN (public Land Mobile network).
2	Not required	Functional check using over the air transmission for MSD and voice call via a network simulator
3	Not required	Functional check using a wired connection to a network simulator
4	Not required	After impact move the vehicle to a shielded environment and functional check using over the air transmission for MSD and voice call via a network simulator
[5]	<p><b>Required to perform either:</b></p> <ul style="list-style-type: none"> <li>- Functional check using over the air transmission for MSD and voice call via a real PLMN (public Land Mobile network), or</li> <li>- Functional check using over the air transmission for MSD and voice call via a network simulator, or</li> <li>- Functional check using a wired connection to a network simulator</li> </ul> <p>For this specific procedure, the subjective voice intelligibility test method can be chosen, with the rated performance at least “3” (appendix 3 to Annex 9), the objective test method can also be chosen at the demand of applicant.</p>	<p><b>Functional check using the HMI (visual control of tell-tales or displays sequence) if in-vehicle AECD or AECS is capable :</b></p> <p><b>1- to check and diagnose the electrical connections between all of the following devices :</b></p> <ul style="list-style-type: none"> <li>- AECD control module</li> <li>- PLMN communication module + antenna</li> <li>- GNSS receiver + antenna</li> <li>- Power source (from vehicle or back-up source)</li> <li>- Warning/Information device (HMI)</li> <li>- Hand free audio equipment (microphone, speaker)</li> </ul> <p><b>2- to discriminate a network failure from an internal failure of the AECD Unit, the communication with GNSS and mobile networks and PSAP is deemed to be compliant if no internal failure warning is indicated by the vehicle HMI.]</b></p>

#### 2. [Pre-requirements for test method 5 :

This test method can be only used if the in-vehicle AECD/AECS is capable:

- a) to check and diagnose the electrical connections between all of the following devices :
  - AECD control module
  - PLMN communication module + antenna
  - GNSS receiver + antenna
  - Power source (from vehicle or back-up source)
  - Warning/Information device (HMI)
  - Hand free audio equipment (microphone, speaker)
- b) to discriminate a network failure from an internal failure of the AECS. The communication with GNSS and mobile networks and PSAP is deemed to be compliant if no internal failure warning is indicated by the vehicle HMI.]

#### 3. [Pre-crash assessment of the AECS operation in case of test method 5 shall include the following:

- 3.1. The MSD emission assessment shall include the verification of at least the following:
  - 3.1.1. Vehicle location data is transmitted ~~correctly~~, and
  - 3.1.2. Time stamp is transmitted ~~correctly~~, and
  - 3.1.3. Vehicle identification number is transmitted ~~correctly~~
- 3.2. The Hands-free voice communication assessment (subjective test) shall include verification of the following:
  - 3.2.1. Voice originating inside the vehicle can be clearly heard by the remote listener with satisfactory intelligibility, and
  - 3.2.2. Speech of the remote speaker can be clearly heard in the vehicle with satisfactory intelligibility
  - 3.2.3. The language and sentence used for the test shall be one of those listed in appendix 2 to this Annex
  - 3.2.4. The rated performance according to appendix 3 to this Annex shall, be at least “3”

To proceed the tests in this paragraph, the test methods as indicated in the table under the headers test method 5 and pre-crash can be used, at the choice of the applicant.]

4. Post-crash assessment of the AECS operation in case of test method 1, 2, 3 and 4 shall include the following:
  - 4.1. The MSD emission assessment shall include the verification of at least the following:
    - 4.1.1. Vehicle location data is transmitted correctly, and
    - 4.1.2. Time stamp is transmitted correctly, and
    - 4.1.3. Vehicle identification number is transmitted correctly
  - 4.2. The Hands-free voice communication assessment (subjective test) shall include verification of the following:
    - 4.2.1. Voice originating inside the vehicle can be clearly heard by the remote listener with satisfactory intelligibility, and
    - 4.2.2. Speech of the remote speaker can be clearly heard in the vehicle with satisfactory intelligibility
    - 4.2.3. The language and sentence used for the test shall be one of those listed in appendix 2 to this Annex
    - 4.2.4. ~~[The rated performance according to appendix 3 to this Annex shall, be at least “3”]~~
  - 4.3. HMI operation assessment shall include a verification of the emergency call status indication operation. At least the following status shall be observed:
    - system is processing (ecall is triggered, connection is being set up or data transmission is in progress or completed or voice call is in progress)
    - transmission failed (connection failed or data transmission failed)
 In agreement with the testing agency the manufacturer can choose to verify the HMI through a manual activation of the AECS
  - 4.4. In case of test method 3 additionally the following Mobile network antenna and Mobile network antenna wire check shall be carried out
    - Measuring VSWR (Voltage Standing Wave Ratio) and verify that VSWR satisfies the specifications prescribed by the manufacturer for ~~new~~ this antennas in the post-crash conditions of the test.
    - Verify that no wire breakage or short-circuit of the antenna feed line occurred for that part of the wiring which is not included in the wired connection to the network simulator

~~Measuring VSWR (Voltage Standing Wave Ratio) and verify that the measured value does not deviate by more than XXX% of that of the installed antenna in pre-crash conditions. an abnormal value(∞).~~
5. [Post-crash assessment of the AECS operation in case of test method 5 shall include the following:
  - 5.1. Verify that the AECS HMI indicates :
    - 5.1.1. the HMI sequence defined by the manufacturer is conform
    - 5.1.2. no AECS internal failure is shown by the HMI]