

Amendments to MID Annex I: Essential requirements

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Participants in the Drafting Group Annex I

Drafting group:

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- + other consultants, specialists in ICT technology involved in the development of the draft

Participants in the Drafting Group Annex I

Consultants:

- European Commission DG GROW, DG ENERGY
- NoBoMet;
- WELMEC WG 7 + associated manufacturer associations;
- WELMEC WG 8 + associated manufacturer associations;
- WELMEC WG 11, 13 + associated manufacturer associations;
- ESMIG aisbl, Mr. W.Strabbing;
- WELMEC ExBo after collation of the comments.

Participants in the Drafting Group Annex I

Consultants:

- **Consumer associations:**
 - WELMEC Chair with an assistance of the European Commission has gone to considerable length to secure their representation
 - the associations of BEUC (the European Consumer Association) and ANEC (the European consumer voice in standardisation) have been approached
 - finally, both have informed us that **they have no suitable knowledgeable person to be involved in the process**
 - a representation of consumers is, unfortunately, habitually a weak point
 - their role should be assumed by legal metrology authorities of MSs

General principles

- Overall guiding principle - as stated in the European Commission Blue Guide of 2022:

*The objectives of the first harmonisation directives focused on **the elimination of barriers and on the free movement of goods in the single market**. These objectives are now being complemented by a comprehensive policy geared to ensuring that only safe and otherwise compliant products find their way on to the market.*

- predominantly, the amendment of Annex I has been driven especially by a huge **progress in information and communication technology (ICT)** since the inception of MID at the beginning of this century
- to correct the **identified errors** in instrument specific annexes if any (thermal energy meters for cooling)
- any other changes only in cases of **high urgency**, especially when an alignment with other EU legislation should be achieved

further in the text: blue – the current text, red – proposed changes

Definitions – added terms

General comment: some definitions have been taken from other EU legislation – it is up to the EC legal services to decide whether to use them here or not (obviously, with them the text is more user-friendly)

Electronic receipt - refers to a digital document [DIRECTIVE 2011/83/EU] or record generated by a transaction or operation, which confirms the details of the transaction. It serves the same function as a physical receipt, providing a record of the transaction for both the provider and the recipient. This electronic document can be stored, retrieved, and transmitted digitally.

Explanation: the term used across the amended Annex I, a matter to be resolved by the European Commission (EC) legal services.

Definitions – added terms

Compatibility - is the ability of a measuring instrument, including software, when used together with one or more other devices in alignment with its designated function, to:

- perform without losing or compromising the ability to perform as intended, and/or
- integrate and/or operate without the need for modification or adaption of any part of the combined devices, and/or
- be used together without conflict/interference or adverse reaction.

Explanation: used in art. 9.3.

Definitions – added terms

Utility - A utility is regarded as a supplier of electricity, gas, thermal energy or water **to the community using regulated distribution systems.**

Explanation: the term is important to be retained as some provisions use it (e.g art. 11), only the definition has to be adapted to stress the special regime in which those measuring instruments operate – therefore, a difference has to be drawn between using the same measuring instruments for other applications (e.g. electricity meters in electromobility). Alternatively, those measuring instruments could be given in the text explicitly but anyhow they have to be differentiated for utility measurements - on the technical side, those utility ones will have always be mandatorily non-resettable whereas those for other applications like electricity meters in EVSE should ideally be resettable. As an additional benefit, it reduces the number of possible changes in Annex I. The absence of the term has also generated some confusion in a number of commentators.

Definitions – added terms

Conventional meter - means an analogue or electronic measuring instrument with no capability to both transmit and receive data.

Smart metering system - an electronic measuring instrument to measure quantities of energy or other media supplied by utilities, adding more information than a conventional meter, and can transmit and receive data using a form of electronic communication.

Explanation: this definition is adapted where necessary from the EU Directive 2019/944 (definition 23) and Commission Recommendation 2012/148/EU, Definitions, only a link to the definition of a measuring instrument had to be established. As regards smart metering systems, the most important provisions for them are in art. 10.1. without explicitly naming them there. The only explicit mentioning of those terms is in art. 10.4. – if this one is deleted then both definitions will be deleted as well.

Definitions – added terms

Direct sales - A trading transaction is direct sales if:

- the measurement result serves as the basis for the price to pay; and
- at least one of the parties involved in the transaction related to measurement is a consumer or any other party requiring a similar level of protection; and
- all the parties in the transaction accept the measurement result **by communicating face-to-face or via networks** at the time **the measurement is concluded**~~and place~~.

Explanation: classically, the interaction between both parties took place in face-to-face communication (implying that it has to be at the same place), currently as regards some measuring instruments the communication can be made on-line (using networks) as well during the process of a measurement (e.g. EVSE measuring system using SW-application delivered by EMSP – E-Mobility Service Provider). The words “...and place” are redundant as face-to-face communication can only take at the same place.

Essential requirements

1. Allowable Errors

1.1. Under rated operating conditions and in the absence of a disturbance, the error of measurement shall not exceed the maximum permissible error (MPE) value as laid down in the appropriate instrument-specific requirements **based on shared risk**.

Explanation: The problem how to take into account the uncertainties of measurement has to be resolved – at the last WG MI meeting in April 2021 it was raised by an association of manufacturers of CSMs: various NBs have different interpretations. Traditionally, in legal metrology the principle of the shared risk or simple acceptance rule has been used, see JCGM 106:2014, par. 8.2, ILAC G8:09/2019, par. 4.2 and 5.1. The change provides for necessary harmonization in the field.

Essential requirements

7.6. A measuring instrument shall be designed so as to allow the control of the measuring tasks after the instrument has been placed on the market and put into use. If necessary, special equipment or software for this control shall be part of the instrument **or shall be made available free of charge by the manufacturer on request of an authorized conformity assessment body on the European or national level or market surveillance authority in a timely manner.** The test procedure shall be described in the operation manual.

Explanation: At the moment the interpretation of 7.6 by some in the community is that those tools, to be only necessary to make the metrological tests, should be delivered with e.g. every and each watermeter delivered to a consumer - consumers do not need them, it is expensive and useless and manufacturers represented by AQUA are logically sharply against it. Under conformity assessment bodies are meant both notified bodies under European harmonized legislation and authorized verification/inspection bodies on national level. It is a restriction of this requirement, therefore a liberalization provision.

Essential requirements

8.4. Legally relevant measurement data, software that is critical for measurement characteristics and metrologically important parameters shall be adequately secured and protected to ensure availability, integrity and authenticity.

Explanation: a rewording and updating of the current 8.4. Securing and protecting is required to ensure availability, integrity, and authenticity for measurement data, but also for software and metrologically important parameters. This is particularly relevant in the case of e-receipts.

Essential requirements

8.6. Updates of software critical for metrological characteristics without an immediate reverification is allowed under the following conditions:

- the new version of the SW has been duly certified (*as an addition to the TEC of the given measuring instrument*);
- the legal metrology authorities touched by the download are duly notified;
- metrologically important parameters inclusive the measurement data remain unchanged;
- no hardware seals need to be broken;
- the software updated is logged in an audit trail with sufficient information;
- the audit trail giving the history of SW updates is not erased during the operation.

Explanation: This is a pervasive unsolved problem which might be considered to be exclusively associated with MIs in use but due to the fact that it is preceded by a change in TEC it is de iure an operation of conformity assessment under EU legislation. Manufacturer associations have often criticized that arrangements as to download of new SW are vastly different in the Member States. European Commission DG GROW has expressed a view that it is a serious barrier to trade on the Single Market to be urgently solved.

Essential requirements

Explanation: Software is not a measuring instrument by itself with a specific annex (unlike e.g. in Medical Device Regulation – MDR) so that some most important requirements for SW, after 30 years from drafting the current MID, should be an integral part of the Annex I to avoid any harmonization by guidance afterwards. They are also closely linked to practical implementations of provisions in art. 10.1. Those requirements have been taken from recently launched Medical Device Regulation (MDR) so that from the legislative point of view their passage through the legislation is guaranteed. In the end the EC legal services should decide whether to keep them or delete them.

8.7. Measuring instruments incorporating software that performs the function of a measuring instrument, shall be designed to ensure repeatability, reliability, and accuracy consistent with their designated purpose. In the occurrence of any fault, appropriate mitigations must be implemented to reduce subsequent risks to the lowest feasible level and to prevent degradation of performance.

8.8. The software shall be developed and manufactured in accordance with the state of the art taking into account the principles of the development life cycle, risk management, including information security, verification and validation.

Essential requirements

8.9. The software that is intended to be used in combination with mobile computing platforms shall be designed and manufactured with due regard for the unique attributes of the mobile platform, such as screen size and contrast ratio, and external conditions pertaining to its use, including environmental variables and ambient light levels.

8.10. The manufacturer shall specify the minimum hardware requirements, characteristics of the information technology networks, and information technology security measures, inclusive of protection against unauthorized access, that are necessary for the software to be used as intended.

Essential requirements

9.1. A measuring instrument shall be **visibly inscribed with:**

- a) manufacturer's name, registered trade name or registered trademark **and if applicable its website;**
and, where applicable:
- b) the number of the EU-type examination certificate or the EU design examination certificate.
- c) information whether or not additional devices providing metrological results comply with the provisions of this Directive on legal metrological control.

Additionally, the measurement instrument shall either present, or be inscribed with:

- (d) information in respect of its accuracy;
and, where applicable:
- (e) information in respect of the conditions of use;
- (f) measuring capacity;
- (g) measuring range;
- (h) identity marking.

Explanation: rearranging and updating of the existing provision.

Essential requirements

9.3. The instrument shall **either** be accompanied by information on its operation **or provide access to this information via commonly available tools** unless the simplicity of the measuring instrument makes this unnecessary.

Information shall be easily understandable and shall include where relevant:

- (a) rated operating conditions;
- (b) mechanical and electromagnetic environment classes;
- (c) the upper and lower temperature limit, whether condensation is possible or not, open, or closed location;
- (d) instructions for installation, maintenance, repairs, permissible adjustments;
- (e) instructions for correct operation and any special conditions of use;
- (f) conditions for compatibility with interfaces, sub-assemblies or measuring instruments.

Explanation: necessary update of the existing provision.

Essential requirements

9.8. All the marks and inscriptions required under any requirement in addition to the CE marking shall be clear, non-erasable, unambiguous and non-transferable. Digitally and/or electronically presented marks and inscriptions shall be adequately secured and protected.

Explanation: necessary extension/update of the existing provision.

Essential requirements

Explanation: art. 10.1. is a key part of the revision taking on board recent state-of-the-art in the ICT technology in application to measuring instruments, especially to smart metering systems. It provides for a wide range of options for manufacturers to be used, formulated in the most general form. Practical implementations might be difficult, especially when any requirements to operational systems of the electronic devices are to be given. In the current MID text other forms of readout of measured values (material measures, CSMs) are not explicitly mentioned – added (green colour).

10.1. A measuring instrument shall:

- be fitted with a metrologically controlled display, scale, readout and/or printer accessible without tools to present the relevant data and/or
- be capable to present the relevant data on a metrologically controlled remote display accessible without tools and/or
- be capable to easily present the data via metrologically controlled application software on the device of the user and/or consumer and/or
- be capable to easily present the data via a metrologically controlled channel.

The instrument specific annex shall specify the need for a local display.

The measurement result presented by any of the four methods above serves as the basis for the price to pay where applicable.

Essential requirements

10.2. The indication of any result shall be clear, unambiguous, **trustworthy and non-discriminatory** and accompanied by such marks and inscriptions necessary to inform the user of the significance of the result. Easy reading of the presented result shall be permitted under normal conditions of use. Additional indications may be shown provided they cannot be confused with the metrologically controlled indications.

~~10.3. In the case of hard copy the print or record shall also be easily legible and non-erasable.~~

Explanation: after the changes in 10.2. above the provision of 10.3. can be deleted.

Essential requirements

10.4. A measuring instrument for direct sales trading transactions shall be designed to present the measurement result to both parties in the transaction when installed as intended. **The measurement data shall be fully established in each individual instrument and immediately presented to the consumer.**

The remaining part of 10.4. unchanged.

Explanation: for the sake of consumer protection this provision excludes the use of clouds which is anyhow in this case highly impractical, on the other hand it does not exclude a transfer of measurement results e.g. to mobile apps of consumers – in this case the app is under control of the manufacturer, therefore it could be put effectively under metrological control.

Essential requirements

10.5. If final customer requests it, smart metering systems shall provide readings used for billing directly to the final customer and any third party designated by the final customer and if necessary to make available suitable tools for this purpose.

Explanation: this provision is closely linked to provisions of the Electricity Directive (ED) 2019/944/EU, art. 20 and the Commission recommendation 2012/148/EU, par. 42 a), however its aim here is to avoid certifications/validations of highly changeable communication SW where always the software part on the data collector side cannot be controllable by metrological authorities. There is a consensus in our community that such an arrangement defies any certification (the part of SW on the side of the Distribution System Operators - DSO is beyond any control by metrological authorities), even under all those options in 10.1. Being an extension of what is written in ED it supports an up-take of dynamic contracts to motivate customers to save up electricity in the roll-outs of smart meters (at least in countries with a positive CBA). This can only be achieved when those customers would get the measurement data directly to their electronic devices or to their HANs, after all it is strongly supported by the Electricity Directive (ED). And after all it is beneficial to economic operators (here DSOs) as their communication systems would not be burdened by any metrological regulation. And finally, this is not a mandatory requirement, it is just “on request”. In principle, such a system is in operation in Germany – an accessory of electricity meters called Smart Meter Gateway (SMGw).

Essential requirements

11. Further processing of data to conclude the trading transaction

11.1 A durable proof in the form of a print-out or electronic receipt of the measurement result from measuring instruments other than a utility measuring instrument and the information to identify the transaction shall be available on request at the time the measurement is concluded, when:

- (a) the measurement is non-repeatable; and
- (b) the measuring instrument is normally intended for use in the absence of one of the trading parties.

11.2 In the case of an electronic receipt the measurement result and the information to identify the transaction shall be accompanied by information that enables the consumer to verify the integrity and authenticity of the data with easily available and suitable tools.

Explanation: reshuffling of the text to include electronic receipts.

Conclusions

- very wide range of comments received from very conservative to ultra liberal
- therefore, a wide-reaching consensus cannot reasonably be expected in all the aspects, even in the drafting group there are some different views
- the new text is highlighted within the old text, the proposed changes are arguably quite limited taking into account that the current version of MID is 30 years old
- to consumer protection not given a profound thought/preference – such provisions are logically always restrictive to available technological options, nevertheless in justified cases can be from my point of view applied
- the polling in the WELMEC Committee will be based on the basis of article by article so that out of that the final text can easily be produced



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ATTENTION!**

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