



# European Smart Metering Industry Group

WE MAKE METERING SMART

## **POSITION PAPER**

on

**new emission limits for Active Infeed Convertors (AIC)**

***25 November 2012***

***Ref.12-25-11***

## Background

In 2011, ESMIG took the initiative to solve issues related to EMC influences on metering equipment that were at that time raised by Swedac in the European Commission working group Measuring Instruments.

As a result of that initiative, the metering industry has joined forces in CEN/CENELEC TC13 and the related and harmonised standard has been extended with a Technical Report (CLC/TR 50579 "Electricity metering equipment (a.c.) - Severity levels, immunity requirements and test methods for conducted disturbances in the frequency range 2 kHz - 150 kHz"). This report has fixed the immunity levels for electricity meters that caused the disturbances identified by Swedac. IEC SC77A also provided support in the work. The report has been approved by the National Committees of the Members States, so the new immunity levels for electricity meters are now officially applied.

In 2011, ESMIG also stated that this extension of the harmonised standards would not be a final solution since with new technologies and equipments, new and more severe disturbances could also be introduced. In order to prevent future EMC problems as much as possible, ESMIG recommended that the European Commission and Standardisation Organisations handle this issue in its broadest sense, taking into account requirements for all equipment that can introduce disturbances and all equipment that is receptive of such disturbances.

### A new issue already arises

Both the

- IEC TC22 - the product committee dealing with equipment and their components for electronic power conversion and electronic power switching, and
- CISPR - the IEC committee responsible for preparing standards that offer protection of radio reception from interference sources such as electrical appliances of all types, the electricity supply system, industrial, scientific and electromedical RF, broadcasting receivers (sound and TV) and, increasingly, IT equipment

are preparing a Technical Specification IEC/TS 62578 Ed. 2: "Power electronics systems and equipment - Operation conditions and characteristics of Active Infeed Converter (AIC) applications including recommendations for emission limits below 150 kHz".

Currently, CISPR/B has invited its members to review this specification. Although many critical comments have been raised as a result of the consultation, mainly related to the impact on mains signaling systems (MSS) such as Power Line Carrier (PLC) based communication as used for example in Smart Metering, CISPR/B seems to favor the new emission levels and questioning "up to which extent power line communication and mains signaling systems in LV power networks and in smart micro grids shall be protected in the range of 2/9 kHz to 150 kHz". The regulated frequency range 3-148,5 kHz (CENELEC band) has been reserved for communications. The A-Band (9 to 95 kHz) has been allocated for use by utilities.

ESMIG is also concerned because the operation and performance of electricity metering equipment is not characterised in the presence of disturbances, such as proposed in IEC/TS 62578.

ESMIG is asking for the attention of the European Commission and other involved stakeholders because the high EMC emission levels allowed by TC22 for power conversion and switching equipment are a serious threat for all existing mains signaling systems, electric measuring instruments and various other Smart Grid applications.

**ESMIG's recommendation**

ESMIG proposes to organise the involved industry stakeholders and the European Commission, and to get to an agreement to limit the noise emission in power networks on acceptable levels that would not result in problems for mains signaling systems and are not above the new levels defined and approved for electricity meters.