

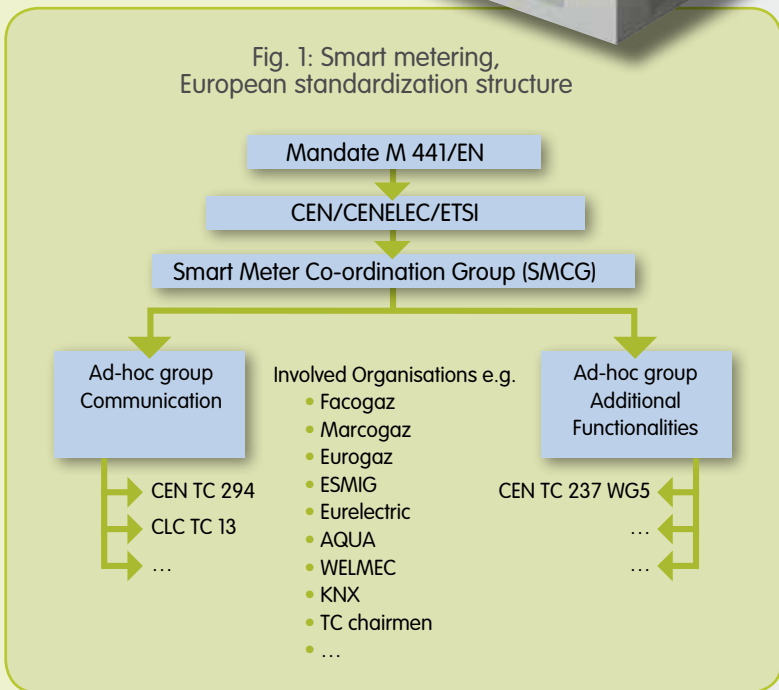
# Standardizing smart metering: Fact or fiction?

Each of us longs for freedom with all our hearts, but with certain rules to guide us and give us planning security for our actions. This particularly applies for a new and complex topic like "smart metering".



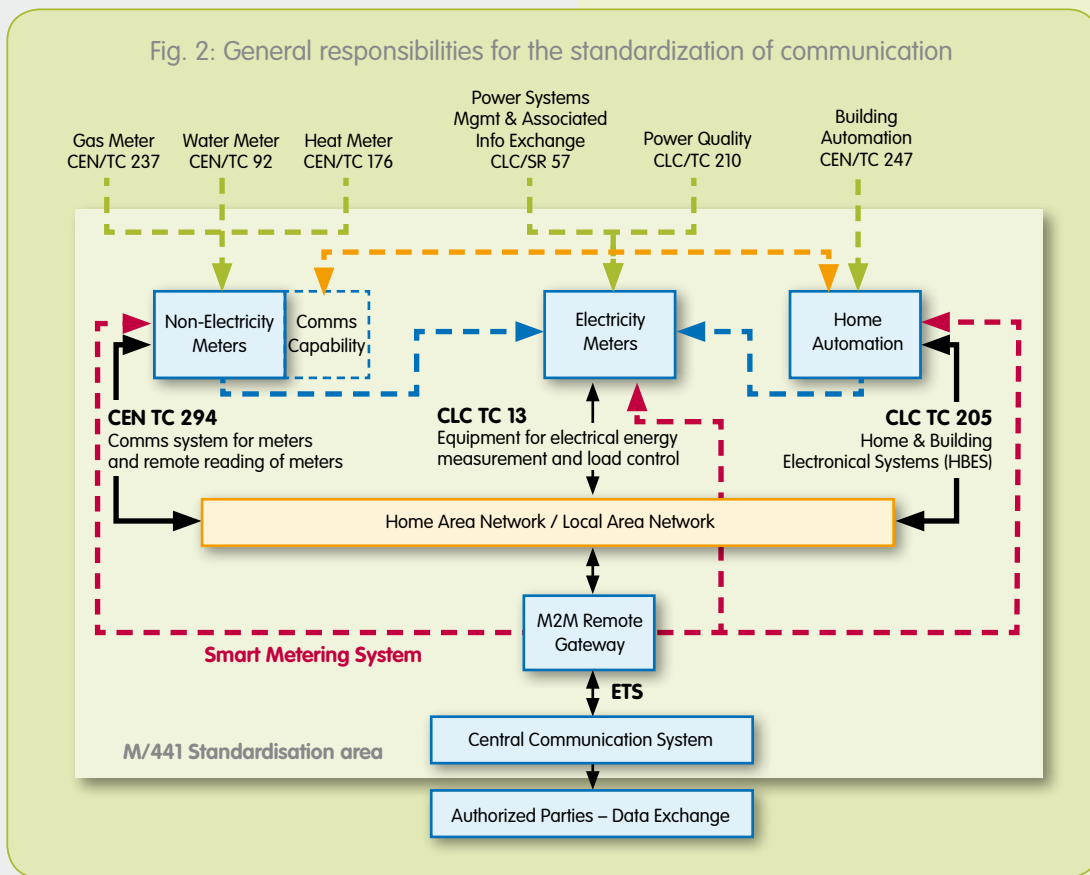
Standards offer security for action, quality and investment. The European Commission sees them as an additional means to implement the generally applicable requirements of the Directives according to the state of the latest technology. But how can this happen when the latest technology and the legal provisions are still not clearly defined? This is precisely the case with smart metering. As a rule, standards follow technology and its tested effectiveness. In this instance, however, a lot is still in motion. And the lack of experience means that this question cannot be answered conclusively yet. In the rest of this article, we will give a description of only the most important ongoing standardization activities and give a cautious view of how they could progress.

Once the Directive 2006/32/EC on energy end-use efficiency and energy services had been issued, each of the member states had to ensure national implementation. Some countries like Germany have adopted the generally applicable requirements in the Energy Industry Act almost literally (§21b and §40). Other countries, like Italy, issued noticeably more concrete regulations, and others again, like England, demanded more precise specifications from the European Commission. Understandable doubts were cast as to whether each country would issue its own regulations and standards and that free movement of goods in Europe would be hindered as a result. With this, the aim of the recently introduced Measuring Instruments Directive 2004/22/EC (MID) for ensuring a common market without barriers to trade would fail.



On the suggestion of the affected sectors, the European Commission has recognized this danger and has given Mandate M441 to three European standards organizations: CEN, CENELEC and ETSI. The purpose of the mandate is to provide a description of the necessary communication standards, as well as any sensible additional functions for the whole field of smart metering. The European standards that are already available should be identified and any

Fig. 2: General responsibilities for the standardization of communication



remaining loopholes should be indicated. For this, the organization shown in Fig. 1 has been created. Delegation of responsibility for the communication standards is illustrated in Fig. 2. Elster is represented in the ad-hoc group "Additional Functionalities" as well as in CEN/TC237 WG 5 (gas meters) and in CEN/TC294.

The work of the ad-hoc groups is available as a final draft from the Smart Metering Co-ordination Group (SMCG) and should officially be submitted to the European Commission in the second quarter of 2010. An important statement in this is that all billing-relevant data is subject to metrological control (as is already the case in Germany). The "communication report" and the "working programme" are therefore regulated in a binding manner, whereas the remaining standardization activities will not become mandatory until the final report is released in late 2011.

In Germany, thanks to the inter-divisional work by manufacturers in the "Open Metering System" (OMS) working committee, excellent work has been done in preparing for the standardization of M-Bus smart meters. This is now working its way via the CEN/TC294 into a European standard. This means that M-Bus is the first detailed standardized communication technology for smart meters. CEN/TC237 WG5 has taken on the task for the standardization of additional gas meter functions. Essential points are the functions of electronic indexes and the valve integrated in the meter for instance. Various different perspectives across Europe are creating difficulties. The draft should be ready for publication by late 2010.

In Germany, the DVGW working committee, entitled "The future of residential gas metering", and the German Federal Network Agency (BNA) are working out how gas meters should satisfy the requirements of the Energy Services Directive. There are currently drafts, but also still a lot of grey areas.

### Outlook

The precise requirements for smart meters remain unclear in most countries. A final statement from the German Federal Network Agency is expected in the second quarter of 2010 at the earliest, which will certainly give several solution approaches. Besides data protection, data security is also an important topic. M-Bus offers a good basis for Germany and the Netherlands. For other countries, other standards will be compiled. A great deal of discussion about the requirements for a shut-off valve in the gas meter is still needed. In this difficult and uncertain field, standards cannot control everything from the word go. The initial version will therefore be imperfect and will be further developed step by step. Under these conditions, the modular product concept, which is offered by both the Absolute ENCODER and the new electronic index, is the right approach.

Heinrich Bertke heinrich.bertke@elster.com